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JUN 24 1898

THE SIXTEEN PRINCIPAL STARS

1824-1948

THEIR

POSITIONS AND ASPECTS

1150
1306

WITH

INSTRUCTIONS

FOR

USE IN NATIVITIES

ALSO

EPHEMERIS OF URANUS AND NEPTUNE

1835-1876

28
5627

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By J. G. DALTON

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PREFACE.

The meagre account of the fixed stars found in astrological books is in all respects poor indeed, consisting of uncertain positions and fictitious attributes — bad enough, what there is of it, and too much of it, such as it is. This wide vacancy in theory must cause a like defect in the practice. We need to have their true spherical locations and aspects, with their relative lustre, and nothing figmentary. Accordingly we offer here what is the very first attempt toward a rational and correct use of them in natal figures. The principal stars are these, with the new notation (Amer. Eph.) of their magnitudes:

Sirius . . .	— 1.4	Procyon .	+ 0.5	This notation is in-
Canopus . .	— 0.8	β Centauri	0.7	versely as to their light,
α Centauri .	— 0.1	Altair . .	0.9	starting with that of
Capella . . .	+ 0.1	α Orionis .	0.9	Aldebaran as the stand-
Arcturus . .	0.2	α Crucis .	0.9	ard unit: making the
Vega . . .	0.2	Aldebaran .	1.0	brightness of Sirius 2.4
Rigel . . .	0.3	Spica . .	1.1	that of Procyon, and 3.4
α Eridani .	0.4	Antares . .	1.2	that of Aldebaran, etc.

For any sufficient treatment of nativities it is obviously necessary that a diagram of the heavens should include a number of the brightest stars. For that purpose we have prepared these tables of the positions and aspects of those sixteen of them for a period of 124 years, giving them in the order of their magnitudes as found by late methods. At the given dates these positions are very exact — rather more so than is needed, partly for the ideal satisfaction of doing the best possible, and for other reasons. They are what are called *true* apparent places; that is, without aberration, which is merely a distortion. Up to 1900 the mean R. Asc. and declination were obtained from the latest precise places in the American Ephemeris and certain astronomical papers connected therewith; and from 1900 to 1948 they were derived by applying the second differences of the previous 48 years. Mean places were then converted into apparent by Bowditch's tables of nutation, the several factors being properly carried forward; and the longitudes and so forth

were got by usual formulas. Being apparent places, some of the differences are quite irregular, but the error by proportion within the two-year intervals is for most of the stars extremely small; in the four-year intervals it is often more, but will be insensible for the uses intended — will never equal the uncertainty in the planets' tabular places, which is often a large fraction of 1′ owing to the defects of theoretical astronomy.

Old tables of mean positions can be found, but are considerably inaccurate. It would have been far easier to have made a brief table of that kind for some medium dates, with annual differences, which for each star are nearly uniform. This we have herein done for two other stars not in the tables. Mean places are but average ones, while the apparent are exact, so that our plan, though wrong in idea, will give in the intervals more closely the actual places. Our tables have the only record of the sextiles, and the trines of course are exactly opposite. The formula for these is given on page 9. If a star's latitude were just 60° there could be but one sextile and that would coincide with its longitude; if more than 60°, there is no sextile on the ecliptic. The squares are always 90° from the star's longitude, and from star itself. We know of but one astrologic writer that has given even a hint as to right places on the ecliptic of aspects other than the square — so simple a thing, so important with most of the stars, and, to some extent, with the Moon and Venus.

We have given parallels of declination on the ecliptic for eight of these stars, the rest not having any, and the other two points are just opposite to those given. The formula for them is upon page 9. When a star's declination is more than the ecliptic obliquity it has no parallel.

The names of the most southern of these stars are popularly unfamiliar in our latitudes because they do not rise here, but they are to be regarded as of more import than well-known ones of much less lustre that are on the list, or others such as Castor and Pollux. Though often these southern ones cannot be put into an ordinary figure, which represents only a part of the sphere, their squares will always have place in it, and sometimes their other aspects.

Putting the stars into a figure should be done by the R. Asc. and declination, for some that have much latitude will otherwise not be in the right houses. Tan decl. × tan lat. of place = sine asc. diff., and 90° ± *that* gives the semi-arc, which with the meridian distance fixes the mundane place of the star, as of any other body. The briefest way of indicating them in a figure is to use the numerals here appended to their names, as the latter cannot well be abbreviated enough. The fact that the numbers denote their order of brightness will be an advantage in doing so, and the names may be easily remembered or referred to. *It is*

not advised that all of them should be put into the figure, but to select some which come in the more important houses, and such as are far north and above the horizon or far south and below it, as thus they are more potent by position; but if the figure be for south latitude the conditions last named are to be reversed. Take notice that in certain latitudes some of them never rise, others never set. If a star's declination is more than the complement of the latitude of place (its diff. from 90°), it will not rise, or not set, as the case may be, and hence *is in no house*, but outside the limits of the figure, and can make no mundane aspects, yet it throws some of its zodiacal aspects to various parts of the figure like the rest.

It may be well to have in addition the place of η Argûs, the most variable of the great stars, which at intervals of about seventy years is among the very brightest. Its last maximum period was about 1830 to 1850, and the next should be 1900 to 1920. We give below its mean positions, with annual differences, in the middle of those periods, and results will be correct to a small fraction of 1′ for either term of twenty years. When reckoning backward change the + signs to —. The sextiles are but about 14° 24′ from the longitudes, and may be had more closely by formula on page 9.

The place of Regulus also may be desired, as it is a familiar star, nearly on the ecliptic, and hardly inferior to Antares. Therefore we give its mean place for the middle date of the tables, 1886, and annual differences, which will generally suffice to get its position with less than 1′ of error for any time in the whole period. For dates previous to 1886 the + or — signs are to be reversed. Its sextiles are almost precisely 60° from the longitudes, and its parallels may be had by the formula on page 9.

η Argûs.

Date.	R. Asc.	A. diff.	Decl.	A. diff.	Long.	A. diff.	Lat.	A. diff.
Jan. 1.	159°	+	58° s.	+	♎ 19°	+	58° s.	+
1840	43 2 7	34.5	50 40.5	18.8	57 7.4	49.7	55 3.8	0.2
1910	160° 23 28.6	34.8	59° 12 40.3	18.9	20° 54 56.0	49.4	55 19.5	0.3

Regulus.

Jan. 1.	150°	+	12° n.	—	♌ 28°	+	0° n.	+
1886	34 30.4	48.0	31 26.2	17.47	14 41.0	52.0	27 39.3	0.13

It should be fully understood that the precision of figures in this table, and in the main tables, is merely a means for getting correct enough positions at special dates; and these when obtained it is well to set down to the nearest second for any trigonometrical use. For calculations in "directions" the nearest tenth of a minute is the utmost nicety ever wanted, either for stars or any other factors; and the even minute only may commonly do.

As to what specific meaning any "bright particular star" may possibly have, there is nowhere so much as a plausible supposition, and perhaps it is vain to seek; yet all the guessing and lying authors have freely radiated their darkness about it in futile conjectures, — but not a word of what can be readily known for certain, the positions and aspects of stars, which are presumably very significant in a general way. One or more of the brightest in an angle probably means much, or casting aspects therein, or to the luminaries or planets. Our own experience goes to confirm this, but it is likely that beyond the first eight or ten stars their indications are not very obvious, however situated. A number of notable facts in regard to them appear along the ecliptic. The most remarkable one is that the squares of three very bright ones, Sirius, Canopus and Vega all come at about ♈ and ♎ 12° to 14°. Libra having been regarded of old as a violent sign, this perhaps arose, unwittingly, from that focus of squares in it. These, when occurring just in an angle, surely must be portentous. We have seen some instances of it in the ascendant, and the persons were of an intense or sort of demonic nature and short-lived. We have a specially authentic nativity where they occur in the midheaven, which came to these squares by arcs measuring just to the time, early in life, when the native's best prospects were blighted and whole career changed. Some other cases where aspects on the ecliptic combine are as follows: All those of Aldebaran agree almost exactly with those of Antares; the squares of *α* Centauri near ♌ and ♒ 28° nearly coincide with a sextile or trine of Arcturus; and the squares of Arcturus and Spica are close together in about 22° of ♋ and ♍. Also some parallels are near together, as those of Rigel and Altair in ♈ and ♎ 21° to 22°, ♏ and ♓ 8° to 9°, all which is shown on page 23A.

Thus we have, with these original tables, presented about all we know of the stars, or can reasonably suppose and advise as to them in nativities, with formulas and rules which apply also to bodies in the solar system. Astrology without the great stars is a strange and extreme misnomer, and it is manifest that in nativities there can be no fairly adequate and rational practice without them; nor indeed, generally, without a true and complete mathematical method.

In the nature of things it is clearly impossible that the *significative*

part of it should ever be an exact science, but it can be much elevated above the base uses of its present state, which is a gross travesty of science, and no better, but rather worse, than it was half a century ago. The books are mostly a mess of confusion, contradiction and pretence, and full of mathematical errors. No one seems ever to have attempted a study of it in the systematic and cautious way that has made the recognized sciences what they are. Its truths are a part of the word of God in nature, and they cannot be fully reached excepting through a skilful knowledge of the spherical astronomy and calculations which lead up to them. Many fondly grope and dabble in it, but there are few real thinkers or competent workers. Its own devotees and advocates are really as much its enemies as the avowed ones, the conceited big-wigs or little ones of science who deride or ignore it, and the influence of both factions has been to repel and mislead any capable students. To the former class belongs the merit of keeping it, though obscurely, in vogue; and to the latter the odium of striving to extinguish a vital spark of truth; for astrology is essentially the philosophic and poetic truth about those lustrous and mirific signals in the sky which to the soulless aridity of astronomy have no meaning, but only utilitarian and intellectual uses. The mathematical hard-heads, and all sorts of bug-eyed little specialists, presume to flout at what the general instinct of mankind, many of the noblest seers and sages, and some of the greatest men of action in history, have believed in or regarded as credible. Few men of eminent ability have actually known much about it. John Flamsteed, the first Astronomer Royal of England, experimented in it. He said, "I found astrology to give generally strong conjectural hints, not perfect declarations"; and this is an apt summary of its essential possibilities. Though there is no record that he ever took more than the first step in it, — made some figures, — the remark implies that it is worth pursuing; and more so now, for many reasons, than in his time. As the darkest part of it, strange to say, is where most of the brightest lights are, the present small but mature work of survey in that region will surely be useful. It is hoped also that it will afford some aid and incentive to a right study of the whole subject by the right sort of persons.

We should add that the orbital motion of Sirius and Procyon was allowed for. In unused columns of the tables are some necessary notes; and on page 11, under the head of "Strictures," continuing on other pages, space is used for slashing comments on certain parts of "science falsely so-called" — astronomy also having its weak points, besides its utter barrenness to the eye of reason.

Sirius, 1.

Date.	R. Asc.		Decl.		Long.		Lat.		✳		✳		Par. decl. s.			
Jan.1.	99°		16° s.		♋ 11°		39° s		♉ 22°		♍ 1°		♏ 15°		♒ 14°	
	′	″	′	″	′	″	′	″	′	″	′	″	′	″	′	″
1824	21	5	28	53	39	40	34	0	5	51	13	28	26	28	33	32
26	22	25	29	8	41	19		1	7	31	15	7	27	38	32	22
28	23	38		21	42	51		3	9	4	16	37	28	36	31	24
30	24	49		31	44	19		5	10	34	18	4	29	16	30	44
32	26	0		37	45	48		6	12	4	19	32	29	32	30	28
1834	27	16	29	40	47	23	34	6	13	40	21	7	29	34	30	26
36	28	38		43	49	6		7	15	23	22	49	29	33	30	27
38	30	5		48	50	55		9	17	13	24	37	29	43	30	17
40	31	34	29	58	52	46		10	19	5	26	27	30	20	29	40
42	33	1	30	11	54	35		11	20	54	28	15	31	16	28	44
1844	34	23		25	56	17	34	12	22	37	29	56	32	20	27	40
46	35	38		39	57	50		13	24	11	31	29	33	24	26	36
48	36	48		50	59	17		15	25	40	32	55	34	10	25	50
50	37	58	30	57	0	12° 45		17	27	8	34	21	34	32	25	28
52	39	11	31	1	2	16		18	28	41	35	52	34	36	25	24
1854	40	30		4	3	55	34	20	30	21	37	30	34	34	25	26
56	41	55		9	5	42		22	32	9	39	14	34	43	25	17
58	43	22		18	7	31		24	34	0	41	3	35	14	24	46
60	44	49		31	9	20		26	35	50	42	50	36	7	23	53
62	46	13	31	47	11	4		28	37	35	44	33	37	16	22	44
1864	47	30	32	2	12	40	34	29	39	12	46	7	38	26	21	34
66	48	42		14	14	10		31	40	43	47	36	39	20	20	40
68	49	52		23	15	37		33	42	12	49	2	39	50	20	10
70	51	4		28	17	8		35	43	44	50	32	39	59	20	1
72	52	22	32	31	18	45		36	45	23	52	8	39	58	20	2
1874	53	46		35	20	30	34	38	47	9	53	52	40	3	19	57
76	55	13		43	22	20		39	48	59	55	41	40	27	19	33
78	56	41	32	55	24	10		41	50	51	57	30	41	14	18	46
80	58	7	33	10	25	57		43	52	39	59	2° 14	42	19	17	41
82	59	100° 26		25	27	36		45	54	19	0	53	43	30	16	30
1884	0	40		39	29	8	34	46	55	52	2	24	44	29	15	31
86	1	51	33	48	30	36		48	57	22	3	51	45	6	14	54
88	3	3		54	32	6		49	58	23° 52	5	20	45	20	14	40
90	4	19		56	33	42		50	0	29	6	55	45	18	14	42
1892	5	42	33	59	35	26	34	50	2	13	8	38	45	17	14	43
94	7	8	34	5	37	14		51	4	2	10	26	45	30	14	30
96	8	35		16	39	3		53	5	52	12	14	46	10	13	50
98	10	1		30	40	49		54	7	39	13	59	47	12	12	48
1900	11	22	34	46	42	30	34	56	9	21	15	38	48	23	11	37
04	13	46	35	12	45	30	35	0	12	25	18	36	50	14	9	46
08	16	9		23	48	30		4	15	27	21	33	50	41	9	19
12	18	54		32	51	57		8	18	57	24	58	50	52	9	8
16	21	50	35	56	55	36		12	22	38	28	34	52	24	7	36
1920	24	30	36	27	58	13° 56		15	26	1	31	51	54	46	5	14
24	26	51	36	48	1	53	35	19	29	0	34	45	56	9	3	51
28	29	22	36	57	5	2		22	32	12	37	52	56	17	3	43
32	32	15	37	10	8	38		25	35	50	41	26	56	50	3	10
1936	34	52	37	29	11	54		28	39	8	44	41	58	2	1	58
40	37	29	37	48	15	11	35	30	42	26	47	55	59	16° 14	0	13° 46
44	40	5	38	7	18	26		32	45	42	51	9	0	27	59	33
48	42	40	38	28	21	39		35	48	58	54	21	1	47	58	13

Canopus, 2.

Date.	R. Asc.	Decl.	Long.	Lat.	
Jan. 1.	95°	52° s.	♋ 12°	75° s.	
	′ ″	′ ″	′ ″	′ ″	
1824	0 50	36 6	32 16	50 48	Has on
26	1 31	16	33 55		
28	2 8	25	35 27		
30	2 43	29	36 55		the ecliptic
32	3 19	36 29	38 23	50 45	
1834	3 57	27	39 59		
36	4 37	25	41 41		
38	5 20	25	43 29		
40	6 4	36 29	45 18		no Aspect
42	6 48	37	47 7	50 39	
1844	7 30	47	48 49		
46	8 8	36 56	50 23		
48	8 44	37 1	51 52		but the □,
50	9 20	3	53 21		
52	9 56	37 1	54 53	50 35	and no
1854	10 36	36 59	56 33		
56	11 18	36 58	58 13° 20		
58	12 2	37 1	0 9		
60	12 46	7	1 58		Parallels.
62	13 28	17	3 43	50 30	
1864	14 8	27	5 19		
66	14 45	34	6 50		
68	15 20	37 37	8 17		*Formula for Sextiles*
70	15 56	36	9 48		of stars with lat.
72	16 35	33	11 26	50 25	less than 60°:
1874	17 16	32	13 11		
76	18 0	37 33	15 0		$\frac{\cos 60°}{\cos \text{star's lat.}}$ = cos dist. of
78	18 44	39	16 49		
80	19 27	48	18 35		sextile from star's long. The
82	20 8	37 58	20 14	50 21	trines are exactly opposite.
1884	20 45	38 6	21 46		
86	21 21	10	23 14		
88	21 56	11	24 44		
90	22 34	8	26 19		
1892	23 15	6	28 2	50 16	
94	23 58	38 7	29 50		
96	24 42	11	31 40		
98	25 25	20	33 27		*Formula for Parallels*
1900	26 7	30	35 9		of stars with decl. less than
04	27 21	38 45	38 11	50 11	the ecliptic obliquity:
08	28 33	45	41 12		
12	29 55	42	44 40		$\frac{\text{sine star's decl.}}{\text{sine ecl. obl.}}$ = sine long. of
16	31 24	38 54	48 20		
1920	32 45	39 14	51 40		Par. from ♈–♎ 0; also = cos
24	33 57	24	54 37	50 4	long. of Par. from ♋–♑ 0.
28	35 11	21	57 14° 46		
32	36 37	22	1 22		
1936	37 55	39 31	4 37		
40	39 14	39	7 52	49 58	
44	40 32	49	11 8		
48	41 51	58	14 24		

α Centauri, 3.

Date.	R. Asc.	Decl.	Long.	Lat.	✱	✱	
Jan. 1.	216°	60° s.	♏ 27°	42° s.	♎ 9°	♍ 14°	
	′ ″	′ ″	′ ″	′ ″	′ ″	′ ″	
1824	56 12	6 7	16 21	31 46	59	32 49	
26	58	6 35	17 52	49	10° 1 28	34 16	
28	0 217° 21	7 1	19 16	52	2 54	35 37	
30	2 18	28	20 35	56	4 17	36 54	
32	3 4	7 57	21 57	31 59	5 39	38 12	Has no
1834	5 46	8 30	23 21	32 3	7 8	39 35	
36	7 32	9 6	24 55	6	8 45	41 5	
38	9 28	9 42	26 35	9	10 28	42 43	
40	11 35	10 17	28 18	13	12 13	44 22	
42	14 50	10 49	29 58	16	13 56	46 0	
1844	16 8	11 17	31 31	32 18	15 32	47 31	
46	18 21	11 43	32 57	21	17 0	48 54	
48	20 22	12 9	34 18	24	18 23	50 12	Parallels
50	21 12	12 37	35 37	27	19 45	51 29	
52	23 55	13 9	37 2	30	21 12	52 51	
1854	25 40	13 44	38 33	32 34	22 46	54 19	
56	27 32	14 20	40 11	37	24 27	55 55	
58	29 36	14 56	41 53	40	26 12	57 35	
60	32 50	15 28	43 35	43	27 56	59 15° 13	on the
62	34 8	15 57	45 11	32 46	29 34	0 47	
1864	36 23	16 23	46 39	49	31 5	2 12	
66	38 29	16 49	48 0	52	32 29	3 31	
68	40 22	17 16	49 19	56	33 51	4 47	
70	41 7	17 47	50 42	32 59	35 16	6 7	
72	43 50	18 21	52 11	33 2	36 48	7 34	ecliptic.
1874	45 40	18 57	53 47	5	38 27	9 7	
76	47 41	19 33	55 29	9	40 11	10 46	
78	50 53	20 6	57 11	12	41 56	12 25	
80	52 11	20 36	58 28° 49	14	43 37	14 1	═══
82	54 29	21 2	0 19	33 17	45 10	15 29	
1884	56 38	21 28	1 42	20	46 35	16 50	
86	58 35	21 54	3 2	23	47 57	18 5	N. B. The
88	0 218° 22	22 24	4 23	26	49 21	19 25	number to
90	1 6	22 57	5 49	33 30	50 50	20 49	each star
1892	3 53	23 32	7 24	33	52 27	22 20	denotes
94	6 51	24 8	9 4	36	54 10	23 58	
96	8 0	24 42	10 47	39	55 55	25 38	only its
98	10 18	25 13	12 26	33 42	57 38	27 15	place in the
1900	12 36	25 41	13 59	46	59 11° 14	28 45	list;
04	16 49	26 32	16 44	51	2 3	31 25	No. 1 has
08	20 40	27 32	19 29	33 58	4 53	34 4	
12	24 10	28 43	22 40	34 4	8 10	37 10	less than
16	28 11	29 49	26 4	10	11 39	40 29	four times
1920	33 47	30 43	29 6	16	14 46	43 26	the light
24	36 8	31 36	31 46	23	17 32	46 1	
28	40 47	32 41	34 39	34 29	20 29	48 48	of No. 16.
32	44 23	33 52	37 58	35	23 54	52 2	
1936	48 41	34 51	40 56	41	26 58	54 54	
40	52 40	35 51	43 54	48	30 1	57 16° 47	
44	56 41	36 50	46 53	34 54	33 5	0 41	
48	0 219° 43	37 49	49 52	35 0	36 10	3 35	

Capella, 4.

Date.	R. Asc.		Decl.		Long.		Lat.		✳		✳		
Jan. 1.	75°		45° n.		☐ 19°		22° n.		♈ 22°		☊ 16°		
	′	″	′	″	′	″	′	″	′	″	′	″	
1824	55	53	48	32	24	13	51	44	15	48	32	39	
26	58	7		35	25	54		44	16	50	33	18	
28	0	11		38	27	27		44	19	13	35	41	
30	2	8		44	28	56		44	20	42	37	10	Has no
32	4	6	48	55	30	26		45	22	12	38	40	
1834	6	12	49	9	32	2	51	45	23	48	40	16	
36	8	26		24	33	45		46	25	31	41	59	
38	10	50		37	35	33		46	27	20	43	47	
40	13	17	49	47	37	27		46	29	13	45	41	Parallels.
42	15	43		52	39	15		46	31	1	47	29	
1844	18	0		55	41	0	51	46	32	46	49	13	
46	20	7	49	58	42	35		46	34	21	50	49	
48	22	6	50	3	44	2		46	35	48	52	16	
50	24	3		12	45	34		46	37	20	53	48	on the
52	26	6		25	47	8		46	38	54	55	22	
1854	28	17		39	48	49	51	46	40	35	57	3	
56	30	38	50	53	50	37		46	42	23	58	17° 51	
58	33	6	51	4	52	29		46	44	15	0	42	
60	35	32		10	54	19		46	46	6	2	33	ecliptic.
62	37	53		14	56	5		46	47	51	4	19	
1864	40	3		16	57	42	51	46	49	29	5	56	
66	42	4	51	20	59	20° 14		46	51	0	7	27	
68	44	1		27	0	42		46	52	29	8	56	
70	46	1		39	2	14		46	54	1	10	28	
72	48	10	51	53	3	53		47	55	39	12	7	
1874	50	29	52	7	5	39	51	47	57	26	13	53	
76	52	55		19	7	30		47	59	23° 17	15	44	STRICTURES.
78	55	22		26	9	22		47	1	9	17	35	
80	57	45		30	11	9		47	2	56	19	23	Star positions are
82	59	77° 59	52	32	12	47		47	4	34	21	1	got by the great
1884	2	2		35	14	17	51	47	6	3	22	30	
86	4	0		41	15	49		47	7	36	24	3	instruments, and
88	5	58	52	51	17	22		47	9	8	25	35	are precisely sure.
90	8	4	53	5	19	3		48	10	49	27	16	Those of planets
1892	10	20		19	20	46		48	12	33	28	59	are given by
94	12	45		31	22	35	51	48	14	22	30	49	
96	15	13	53	40	24	24		48	16	11	32	37	theory, are much
98	17	37		44	26	13		48	18	0	34	26	less exact, and
1900	19	54		46	27	56		47	19	42	36	9	even by the latest
04	23	59	53	53	31	0		47	22	47	39	13	tables most of
08	28	0	54	14	34	3	51	48	25	50	42	17	
12	32	35		41	37	34		48	29	20	45	47	them are *varying*
16	37	30	54	56	41	17		48	33	3	49	30	*more and more*
1920	41	59	55	0	44	38		48	36	25	52	51	*from the*
24	45	57		11	47	38		48	39	25	55	51	*observed places.*
28	50	7		36	50	49	51	48	42	36	59	18° 2	
32	54	54	55	59	54	28		48	46	14	2	41	
1936	59	78° 15	56	14	57	21° 45		48	49	32	5	58	
40	3	36		28	1	2		48	52	49	9	16	
44	7	58		41	4	20		48	56	7	12	33	
48	12	20		54	7	39	51	48	59	25	15	52	

Vega, 5.

Date.	R. Asc.		Decl.		Long.		Lat.		
Jan. 1.	277°		38° n.		♍ 12°		61° n.		
	′	″	′	″	′	″	′	″	
1824	44	52	37	28	51	14	44	32	Has on
26	45	54		41	52	55			
28	46	51		51	54	28			
30	47	46	37	58	55	59			
32	48	39	38	0	57	28	44	30	the ecliptic
1834	49	37		0	59	13° 5			
36	50	39		1	0	48			
38	51	45		3	2	38			
40	52	52	38	10	4	30	44	27	no Aspect
42	53	59		21	6	20			
1844	55	2		33	8	3			
46	56	1		44	9	39			
48	56	56	38	52	11	10	44	26	
50	57	50		56	12	39			but the □,
52	58	46		57	14	14			
1854	59	278° 47		57	15	55			
56	0	52	38	59	17	43			
58	1	59	39	4	19	35	44	24	
60	3	6		14	21	26			and no
62	4	10		26	23	11			
1864	5	10		38	24	50			
66	6	6	39	48	26	21			
68	7	0		53	27	51	44	22	
70	7	56		54	29	23			Parallels.
72	8	55		54	31	2			
1874	9	59	39	55	32	49			
76	11	5	40	0	34	40			
78	12	13		8	36	31	44	20	
80	13	18		20	38	19			
82	14	20		33	40	0			
1884	15	17		43	41	33			
86	16	12	40	50	43	4			
88	17	5		52	44	33	44	18	The ☽ and some
90	18	3		53	46	10			
1892	19	6		53	47	55			of the planets
94	20	12	40	57	49	45			
96	21	19	41	4	51	37			
98	22	25		15	53	26	44	16	may reach the ✶
1900	23	28		28	55	9			of this star, mostly
04	25	21		47	58	14° 14			when in ♍ with
08	27	12		52	1	19	44	14	
12	29	17	41	55	4	49			2–3° lat. n.; and its △
16	31	33	42	12	8	33			when in ♎
1920	33	18		36	11	25	44	12	with like lat. s.
24	35	26		51	14	55			
28	37	20	42	52	18	7			
32	39	32	43	0	21	47	44	9	
1936	41	31		12	25	4			
40	43	31		26	28	22			
44	45	31		40	31	41	44	6	
48	47	31		54	35	0			

Arcturus, 6.

Date.	R. Asc.		Decl.		Long.		Lat.		*		*		Par. decl. n.			
Jan.1.	211°		20°	n.	♎ 21°		30°	n.	☊ 27°		♌ 16°		♉ 29°		☊ 0°	
	′	″	′	″	′	″	′	″	′	″	′	″	′	″	′	″
1824	54	48	6	2	46	57	51	30	24	21	9	33	40	13	19	47
26	56	8	5	28	48	38		25	25	59	11	16	38	5	21	55
28	57	22	4	55	50	10		20	27	30	12	51	35	54	24	6
30	58	34	4	22	51	39	51	15	28	57	14	22	33	29	26	31
32	59	212° 48	3	46	53	9		10	30	24	15	54	30	33	29	27
1834	1	9	3	6	54	46		5	31	59	17	33	27	14	32	46
36	2	35	2	24	56	29	51	0	33	40	19	19	23	41	36	19
38	4	6	1	41	58	22° 19	50	55	35	28	21	10	20	10	39	50
40	5	37	0	59	0	11		49	37	17	23	4	17	1	42	59
42	7	5	0	19° 20	2	0		44	39	4	24	56	14	19	45	41
1844	8	28	59	45	3	43		40	40	45	26	40	12	4	47	56
46	9	44	59	12	5	18	50	35	42	18	28	18	9	57	50	3
48	10	56	58	39	6	48		30	43	46	29	50	7	38	52	22
50	12	9	58	4	8	17		25	45	13	31	21	4	55	55	5
52	13	27	57	25	9	50		20	46	44	32	56	1	28° 40	58	1° 20
1854	14	53	56	44	11	34	50	16	48	26	34	42	58	12	1	48
56	16	21	56	2	13	19		11	50	9	36	30	54	46	5	14
58	17	53	55	19	15	11		5	51	59	38	24	51	27	8	33
60	19	22	54	39	17	2	50	0	53	47	40	16	48	39	11	21
62	20	46	54	2	18	47	49	55	55	30	42	4	46	17	13	43
1864	22	4	53	29	20	24		50	57	5	43	43	44	12	15	48
66	23	17	52	56	21	56		45	58	28° 34	45	17	42	1	17	59
68	24	29	52	22	23	24		40	0	1	46	48	39	29	20	31
70	25	46	51	45	24	56	49	35	1	31	48	21	36	28	23	32
72	27	8	51	4	26	35		30	3	7	50	2	33	6	26	54
1874	28	37	50	22	28	21		25	4	51	51	51	29	36	30	24
76	30	8	49	39	30	12		19	6	40	53	44	26	18	33	42
78	31	39	48	58	32	3	49	14	8	29	55	37	23	24	36	36
80	33	5	48	21	33	50		9	10	14	57	27	20	57	39	3
82	34	24	47	47	35	30		4	11	52	59	17° 9	18	50	41	10
1884	35	39	47	14	37	3	49	0	13	22	0	43	16	44	43	16
86	36	51	46	41	38	32	48	55	14	47	2	16	14	22	45	38
88	38	5	46	5	40	2		50	16	17	3	47	11	32	48	28
90	39	26	45	25	41	39		45	17	52	5	25	8	17	51	43
1892	40	53	44	43	43	23		40	19	34	7	12	4	51	55	9
94	42	23	44	0	45	12	48	35	21	21	9	4	1	27° 28	58	2° 32
96	43	55	43	19	47	4		29	23	11	10	58	58	30	1	30
98	45	22	42	40	48	53		24	24	57	12	48	55	57	4	3
1900	46	44	42	5	50	35		19	26	37	14	33	53	48	6	12
04	49	12	41	0	53	39	48	9	29	37	17	41	49	30	10	30
08	51	43	39	47	56	23° 42	47	59	32	36	20	48	43	45	16	15
12	54	38	38	22	0	12		49	36	2	24	23	36	59	23	1
16	57	213° 40	37	1	3	55		39	39	40	28	10	31	16	28	44
1920	0	21	35	52	7	16		29	42	57	31	35	27	2	32	58
24	2	46	34	46	10	16		19	45	52	34	39	22	27	37	33
28	5	25	33	28	13	27	47	9	48	59	37	54	16	14	43	46
32	8	26	32	3	17	5	46	59	52	33	41	37	9	42	50	18
1936	11	7	30	49	20	26		49	55	46	44	58	4	26° 28	55	3° 32
40	13	48	29	35	23	47		39	59	29° 0	48	18	59	17	0	43
44	16	29	28	22	27	8		29	2	13	51	40	54	9	5	51
48	19	10	27	9	30	29		19	5	27	55	3	49	3	10	57

Rigel, 7.

Date.	R. Asc.		Decl.		Long.		Lat.		*		*		Par. decl. s.			
Jan. 1.	76°		8° s.		☐ 14°		31° s.		♈ 20°		♌ 8°		♎ 21°		♓ 8°	
	′	″	′	″	′	″	′	″	′	″	′	″	′	″	′	″
1824	31	30	24	40	22	30	8 45		7	21	37	39	33	14	26	46
26	32	56		37	24	10		44	9	0	39	21		13		47
28	34	16		33	25	44		43	10	33	40	54	33	7	26	53
30	35	32		26	27	12		42	12	2	42	23	32	50	27	10
32	36	49		15	28	42		41	13	31	43	53	32	19	27	41
1834	38	12	24	1	30	19	8 39		15	7	45	31	31	39	28	21
36	39	41	23	45	32	3		38	16	50	47	15	30	52	29	8
38	41	16		32	33	52		37	18	39	49	5	30	14	29	46
40	42	51		21	35	44		36	20	30	50	57	29	46	30	14
42	44	26	23	15	37	33		35	22	20	52	47		34		26
1844	45	55		12	39	17	8	35	24	3	54	32		32		28
46	47	16		9	40	52		34	25	37	56	6		30		30
48	48	30	23	3	42	19		32	27	4	57	34	29	17	30	43
50	49	50	22	53	43	51		32	28	36	59	6	28	50	31	10
52	51	10		40	45	25		31	30	9	0	9° 41	28	12	31	48
1854	52	37		25	47	6	8	30	31	50	2	22	27	27	32	33
56	54	10	22	10	48	54		29	33	38	4	11	26	43	33	17
58	55	46	21	59	50	46		28	35	29	6	3	26	14	33	46
60	57	21		52	52	36		27	37	19	7	54	25	58	34	2
62	58	51		48	54	22		26	39	4	9	39		54		6
1864	0	77° 15		45	56	0	8	25	40	41	11	18		53		7
66	1	34	21	41	57	31		24	42	12	12	49		45		15
68	2	50		32	59	15° 0		23	43	41	14	19	25	24	34	36
70	4	9		20	0	32		22	45	12	15	51	24	48	35	12
72	5	34	21	5	2	11		21	46	51	17	30	24	4	35	56
1874	7	6	20	51	3	57	8	20	48	36	19	17	23	20	36	40
76	8	41		38	5	48		19	50	27	21	9	22	46	37	14
78	10	17		30	7	39		18	52	18	23	0		27		33
80	11	49		26	9	26		17	54	5	24	48		20		40
82	13	15	20	23	11	6		17	55	45	26	28		20		40
1884	14	34		19	12	39	8	16	57	17	28	2	22	15	37	45
86	15	51		13	14	9		15	58	21° 46	29	31	21	59	38	1
88	17	9	20	2	15	39		14	0	16	31	2	21	27	38	33
90	18	32	19	47	17	16		13	1	52	32	39	20	45	39	15
1892	20	1		32	19	0		12	3	36	34	24	20	1	39	59
94	21	36		19	20	50	8	11	5	25	36	14	19	23	40	37
96	23	12		10	22	41		10	7	16	38	6	19	0	41	0
98	24	45		5	24	30		9	9	5	39	56	18	50		10
1900	26	13	19	2	26	13		8	10	46	41	39		49		11
04	28	51	18	54	29	17	8	7	13	51	44	43	18	35	41	25
08	31	29		31	32	20		5	16	53	47	47	17	30	42	30
12	34	30	18	2	35	51		3	20	23	51	19	16	5	43	55
16	37	42	17	45	39	34	8	1	24	5	55	2	15	25	44	35
1920	40	35		40	42	55	7	59	27	26	58	10° 25	15	22	44	38
24	43	9		28	45	55		57	30	25	1	25	14	53	45	7
28	45	54	17	1	49	6		56	33	35	4	37	13	34	46	26
32	49	2	16	35	52	45		54	37	13	8	17	12	21	47	39
1936	51	52		19	56	2	7	52	40	29	11	35	11	39	48	21
40	54	41	16	3	59	16° 20		50	43	46	14	53	10	59	49	1
44	57	31	15	48	2	37		48	47	3	18	12	10	21	49	39
48	0	78° 22	15	33	5	56		46	50	21	21	31	9	44	50	16

α Eridani, 8.

Date.	R. Asc.	Decl.	Long.	Lat.	*	*	
Jan. 1.	22°	58° s.	♓ 12°	59° s.	♓ 1°	♓ 23°	
	′ ″	′ ″	′ ″	′ ″	′ ″	′ ″	
1824	47 31	7 52	48 58	22 12	44 18	53 37	
26	48 30	7 18	50 42	12	46 7	55 17	
28	49 25	6 45	52 16	12	47 43	56 50	
30	50 24	6 13	53 48	13	49 21	58 14	Has no
32	51 27	5 39	55 18	13	50 48	59 24° 48	
1834	52 40	5 2	56 58	22 14	52 36	1 19	
36	53 58	4 22	58 13° 43	14	54 25	3 1	
38	55 17	3 40	0 34	14	56 18	4 51	
40	56 31	2 59	2 28	14	58 2° 12	6 44	Parallels
42	57 38	2 20	4 18	15	0 4	8 33	
1844	58 38	1 45	6 2	22 15	1 50	10 15	
46	59 23° 34	1 12	7 39	15	3 29	11 49	
48	0 30	0 40	9 10	15	5 3	13 18	
50	1 32	0 7	10 41	16	6 36	14 46	on the
52	2 42	59 57° 31	12 16	16	8 14	16 18	
1854	3 59	58 51	13 59	22 16	9 59	17 58	
56	5 18	58 10	15 49	17	11 53	19 45	
58	6 34	57 28	17 42	17	13 47	21 37	
60	7 43	56 49	19 34	17	15 40	23 28	ecliptic
62	8 45	56 13	21 20	17	17 27	25 14	
1864	9 41	55 39	23 0	22 17	19 8	26 51	
66	10 37	55 7	24 32	18	20 44	28 21	
68	11 36	54 35	26 2	18	22 18	29 46	
70	12 44	54 0	27 36	19	23 55	31 16	
72	13 59	53 21	29 16	19	25 39	32 53	
1874	15 18	52 40	31 5	22 19	27 30	34 39	
76	16 36	52 0	32 56	19	29 22	36 30	For the truest
78	17 47	51 18	34 50	20	31 17	38 23	students a proper
80	18 51	50 41	36 38	20	33 7	40 10	astronomy
82	19 48	50 7	38 20	20	34 52	41 47	of the solar
1884	20 43	49 35	39 54	22 21	36 30	43 18	
86	21 42	49 4	41 24	21	38 4	44 44	system should
88	22 46	48 29	42 56	21	39 38	46 15	locate its main
90	23 59	47 51	44 34	21	41 17	47 52	objects, the
1892	25 17	47 11	46 21	21	43 4	49 38	planets, *in their*
94	26 35	46 29	48 11	22 21	44 55	51 27	
96	27 49	45 49	50 6	22	46 51	53 20	
98	28 55	45 10	51 56	22	48 43	55 8	*path, the Zodiac.*
1900	29 54	44 36	53 39	22	50 29	56 49	The official
04	31 45	43 32	56 46	23	53 40	59 25° 51	books give
08	33 58	42 22	59 14° 52	22 23	56 3° 51	2 53	
12	36 34	41 1	3 25	24	0 28	6 22	only their
16	38 58	39 41	7 11	24	4 19	10 3	R. Asc. and decl.
1920	40 55	38 32	10 35	25	7 48	13 23	for the uses
24	42 50	37 28	13 38	25	10 55	16 21	of materialists.
28	45 13	36 14	16 52	22 26	14 13	19 30	
32	47 49	34 51	20 33	26	17 59	23 7	
1936	49 59	33 40	23 54	27	21 24	26 23	
40	52 10	32 28	27 14	27	24 49	29 39	
44	54 19	31 17	30 35	28	28 14	32 55	
48	56 29	30 5	33 56	22 28	31 40	36 12	

Procyon, 9.

Date.	R. Asc.		Decl.		Long.		Lat.		*		*		Par. decl. n.			
Jan. 1.	112°		5° n.		♋ 23°		15° s.		♉ 24°		♍ 22°		♈ 14°		♍ 15°	
	′	″	′	″	′	″	′	″	′	″	′	″	′	″	′	″
1824	31	32	40	7	21	47	59	5	42	10	1	24	21	49	38	11
26	33	6	39	44	23	26		6	43	49	3	3	20	54	39	6
28	34	33		23	24	57		7	45	20	4	34	20	4	39	56
30	35	56	39	6	26	24		9	46	48	6	1	19	21	40	39
32	37	20	38	53	27	53		10	48	16	7	29	18	46	41	14
1834	38	50		42	29	28	59	10	49	51	9	4	18	16	41	44
36	40	28		30	31	10		11	51	33	10	46	17	42	42	18
38	42	11	38	15	32	58		12	53	22	12	34	17	2	42	58
40	43	56	37	56	34	49		13	55	13	14	25	16	13	43	47
42	45	39		33	36	37		15	57	2	16	13	15	17	44	43
1844	47	16	37	9	38	19	59	17	58	25° 44	17	55	14	19	45	41
46	48	46	36	37	39	54		18	0	19	19	29	13	0	47	0
48	50	10		29	41	23		19	1	48	20	57	12	42		18
50	51	34		14	42	51		21	3	16	22	26	12	3	47	57
52	53	2	36	2	44	24		23	4	49	23	58	11	29	48	31
1854	54	38	35	50	46	4	59	24	6	30	25	38	10	55	49	5
56	56	19		35	47	51		26	8	17	27	24	10	14	49	46
58	58	4	35	16	49	41		28	10	7	29	14	9	26	50	34
60	59	113° 48	34	54	51	30		30	11	57	31	3	8	31	51	29
62	1	26		30	53	14		32	13	51	32	37	7	33	52	27
1864	2	57	34	7	54	50	59	33	15	18	34	22	6	37	53	23
66	4	22	33	47	56	20		35	16	47	35	52	5	49	54	11
68	5	45		32	57	47		36	18	15	37	19	5	9	54	51
70	7	11		19	59	24° 17		37	19	45	38	49	4	35	55	25
72	8	44	33	8	0	54		38	21	23	40	26	4	3	55	57
1874	10	24	32	54	2	39	59	39	23	8	42	10	3	26	56	34
76	12	8		37	4	29		41	24	58	44	0	2	41	57	19
78	13	53	32	16	6	19		42	26	48	45	50	1	49	58	11
80	15	33	31	53	8	5		43	28	34	47	36	0	13° 52	59	16° 8
82	17	7		30	9	44		44	30	14	49	15	59	56	0	4
1884	18	34	31	9	11	16	59	46	31	46	50	46	59	5	0	55
86	19	58	30	52	12	44		47	33	14	52	14	58	22	1	38
88	21	23		38	14	13		48	34	44	53	43	57	46	2	14
90	22	54		26	15	49		50	36	19	55	18	57	12	2	48
1892	24	32	30	13	17	32	59	51	38	3	57	1	56	35	3	25
94	26	15	29	56	19	21		53	39	52	58	23° 50	55	51	4	9
96	28	0		36	21	11		55	41	43	0	40	54	59	5	1
98	29	42	29	12	22	59		56	43	31	2	27	54	1	5	59
1900	31	18	28	47	24	40	59	16° 58	45	12	4	8	53	2	6	58
04	34	10	28	7	27	41	0	2	48	14	7	9	51	22	8	38
08	37	1	27	40	30	41		5	51	15	10	8	50	10	9	50
12	40	18	27	12	34	9		7	54	42	13	35	48	54	11	6
16	43	47	26	31	37	49		10	58	26° 23	17	15	47	10	12	50
1920	46	56	25	44	41	8		13	1	42	20	34	45	17	14	43
24	49	44	25	9	44	5	0	16	4	40	23	30	43	49	16	11
28	52	44	24	44	47	15		19	7	50	26	39	42	39	17	21
32	56	10	24	11	50	51		22	11	27	30	15	41	10	18	50
1936	59	114° 15	23	34	54	6		25	14	43	33	30	39	37	20	23
40	2	20	22	56	57	25° 21	0	28	17	58	36	44	38	2	21	58
44	5	24	22	19	0	36		31	21	14	39	58	36	26	23	34
48	8	30	21	41	3	52		35	24	30	43	14	34	51	25	9

β Centauri, 10.

Date.	R. Asc.		Decl.		Long.		Lat.		*		*		
Jan. 1.	207°		59° s.		♏ 21°		44° s.		♎ 5°		♍ 7°		
	′	″	′	″	′	″	′	″	′	″	′	″	
1824	52	42	31	11	21	9	6 56		29	40	12	37	
26	54	55	31	44	22	48	57		31	21	14	16	
28	56	57	32	15	24	21	58		32	54	15	47	
30	58	208° 48	32	45	25	49	6 59		34	24	17	15	
32	0	35	33	18	27	19	7 0		35	54	18	43	Has no
1834	2	25	33	55	28	53	2		37	30	20	16	
36	4	23	34	34	30	36	3		39	14	21	57	
38	6	33	35	15	32	25	4		41	4	23	46	
40	8	51	35	55	34	16	6		42	57	25	36	
42	11	12	36	31	36	5	7 6		44	46	27	24	
1844	13	29	37	5	37	48	7		46	30	29	6	
46	15	35	37	36	39	23	8		48	5	30	40	
48	17	30	38	6	40	52	9		49	35	32	8	
50	19	18	38	38	42	20	10		51	5	33	36	Parallels
52	21	6	39	13	43	53	7 11		52	38	35	8	
1854	23	2	39	52	45	34	12		54	20	36	48	
56	25	9	40	32	47	21	13		56	8	38	34	
58	27	25	41	12	49	12	14		58	0	40	24	
60	29	47	41	50	51	2	15		59	6° 52	42	13	
62	32	6	42	24	52	47	7 16		1	37	43	57	on the
1864	34	16	42	56	54	24	17		3	15	45	33	
66	36	15	43	26	55	54	18		4	46	47	3	
68	38	4	43	57	57	23	19		6	15	48	30	
70	39	52	44	31	58	22° 54	20		7	47	50	0	
72	41	45	45	9	0	32	7 21		9	26	51	37	ecliptic.
1874	43	49	45	49	2	17	22		11	13	53	22	
76	46	3	46	28	4	6	23		13	3	55	9	
78	48	25	47	7	5	59	24		14	56	57	1	
80	50	46	47	43	7	45	25		16	44	58	8° 47	
82	53	0	48	14	9	25	7 26		18	24	0	26	
1884	55	3	48	45	10	57	27		19	57	1	57	
86	56	55	49	15	12	26	28		21	27	3	24	
88	58	209° 43	49	48	13	55	29		22	57	4	53	The real
90	0	34	50	25	15	31	29		24	34	6	28	Astrology on the celestial
1892	2	35	51	4	17	14	7 30		26	18	8	10	sphere is in
94	4	46	51	45	19	4	31		28	8	9	59	
96	7	7	52	24	20	55	33		30	1	11	49	practice mere
98	9	29	53	0	22	43	34		31	50	13	36	'strology, a
1900	11	47	53	32	24	25	35		33	33	15	17	poor thing with
04	15	49	54	33	27	28	7 36		36	38	18	19	little head to it.
08	19	27	55	40	30	30	38		39	41	21	19	There is a
12	23	34	56	59	33	59	40		43	12	24	46	true Starry
16	28	17	58	15	37	41	42		46	56	28	26	Science on high
1920	32	47	59	60° 20	41	1	44		50	18	31	45	which astronomy
24	36	37	0	21	44	0	7 46		53	18	34	41	& the other thing
28	40	21	1	32	47	10	48		56	7° 30	37	49	both fail to show.
32	44	44	2	52	50	47	50		0	9	41	25	
1936	48	52	4	0	54	3	52		3	27	44	39	
40	53	2	5	8	57	23° 19	7 54		6	45	47	53	
44	57	210° 12	6	16	0	36	56		10	3	51	8	
48	1	25	7	24	3	53	58		13	22	54	23	

Altair, 11.

Date.	R. Asc.		Decl.		Long.		Lat.		✳		✳		Par. decl. n.			
Jan.1.	295°		8° n.		♍ 29°		29° n.		♐ 4°		♓ 24°		♈ 21°		♍ 8°	
	′	″	′	″	′	″	′	″	′	″	′	″	′	″	′	″
1824	33	10	24	38	17	52	18	34	17	8	18	36	33	8	26	52
26	34	39	25	2	19	33		33	18	49	20	17	34	19	25	41
28	36	0		23	21	7		33	20	23	21	51	35	21	24	39
30	37	18		40	22	37		33	21	53	23	21	36	8	23	52
32	38	37	25	54	24	8		33	23	23	24	52	36	44	23	16
1834	40	1	26	6	25	45	18	31	25	0	26	30	37	13	22	47
36	41	31		19	27	29		31	26	44	28	15	37	43	22	17
38	43	6		35	29	20		30	28	35	30	6	38	23	21	37
40	44	44	26	55	31	13		30	30	27	31	58	39	18	20	42
42	46	19	27	19	33	3		30	32	18	33	49	40	26	19	34
1844	47	50	27	43	34	47	18	30	34	2	35	33	41	37	18	23
46	49	14	28	5	36	24		30	35	38	37	9	42	41	17	19
48	50	32		24	37	55		30	37	9	38	40	43	35	16	25
50	51	50		39	39	25		29	38	39	40	11	44	15	15	45
52	53	12	28	51	41	0		29	40	14	41	46	44	43	15	17
1854	54	40	29	4	42	42	18	29	41	56	43	28	45	13	14	47
56	56	14		19	44	31		28	43	45	45	17	45	51	14	9
58	57	51	29	39	46	23		28	45	37	47	10	46	42	13	18
60	59	296°	28	30	2	48	15		28	47	29	49	1	47	49	12
62	1	0		26	50	1		28	49	15	50	48	48	58	11	2
1864	2	26	30	49	51	40	18	28	50	54	52	26	50	7	9	53
66	3	46	31	9	53	12		28	52	26	53	59	51	5	8	55
68	5	4		25	54	42		27	53	55	55	29	51	48	8	12
70	6	24		38	56	15		27	55	28	57	2	52	20	7	40
72	7	50	31	51	57	55		26	57	8	58	25° 42	52	49	7	11
1874	9	22	32	5	59	42	18	26	58	5° 55	0	29	53	24	6	36
76	10	59		23	1	♒ 0°	34	25	0	47	2	21	54	11	5	49
78	12	36	32	45	3	26		25	2	39	4	14	55	12	4	48
80	14	10	33	10	5	15		25	4	27	6	2	56	23	3	37
82	15	38		34	6	56		25	6	8	7	43	57	34	2	26
1884	16	59	33	55	8	30	18	25	7	42	9	17	58	36	1	24
86	18	18	34	12	10	0		25	9	12	10	47	59	22° 24	0	36
88	19	36		26	11	31		24	10	43	12	19	0	0	0	7° 0
90	21	0		39	13	9		24	12	21	13	57	0	29	59	31
1892	22	31	34	52	14	54		24	14	6	15	42	1	1	58	59
94	24	6	35	9	16	45	18	24	15	57	17	33	1	44	58	16
96	25	44	35	31	18	37		23	17	49	19	25	2	42	57	18
98	27	19	35	55	20	27		23	19	39	21	15	3	51	56	9
1900	28	49	36	19	22	11		23	21	22	22	59	5	3	54	57
04	31	31	37	0	25	17		23	24	29	26	5	7	3	52	57
08	34	10	37	28	28	22	18	22	27	34	29	11	8	12	51	48
12	37	13	37	57	31	55		22	31	6	32	44	9	22	50	38
16	40	28	38	41	35	40		21	34	51	36	29	11	23	48	37
1920	43	25	39	29	39	3		21	38	14	39	53	13	45	46	15
24	46	2	40	5	42	5		20	41	15	42	54	15	27	44	33
28	48	48	40	32	45	18	18	20	44	29	46	8	16	29	43	31
32	51	58	41	6	48	59		19	48	9	49	48	17	55	42	5
1936	54	51	41	43	52	18		19	51	28	53	8	19	38	40	22
40	57	297°	43	42	21	55	37		18	54	47	56	28	21	38	39
44	0	36	42	59	58	1°	57		18	58	6° 7	59	26° 48	23	7	36	53
48	3	29	43	38	2		18	18	17	1	27	3	8	24	54	35	6

α Orionis, 12.

Date.	R. Asc.		Decl.		Long.		Lat.		✳		✳		Par. decl. n.			
Jan. 1.	86°		7° n.		☐ 26°		16° s.		♈ 27°		♌ 24°		♈ 18°		♍ 11°	
	′	″	′	″	′	″	′	″	′	″	′	″	′	″	′	″
1824	24	58	22	0	18	5	3	3	39	9	57	0	47	8	12	52
26	26	35	21	56	19	45		1	40	49	58			3	12	57
28	28	5		53	21	18		0	42	22	0	25° 41		0	13	0
30	29	32		54	22	48	3	0	43	52	1	14	47	4	12	56
32	30	58	21	59	24	17	2	59	45	20	3	44		16		44
1834	32	32	22	7	25	53		56	46	56	4	13		34		26
36	34	12		16	27	36		55	48	39	6	50	47	54	12	6
38	35	58		22	29	26		54	50	29	8	34	48	7	11	53
40	37	46		25	31	18		53	52	21	10	24		16		44
42	39	32		23	33	7	2	52	54	10	12	15		15		45
1844	41	12	22	20	34	50		51	55	53	13	5		12		48
46	42	44		16	36	26		51	57	28	15	48	48	7	11	53
48	44	11		16	37	56		50	58		58	24		10		50
50	45	38		19	39	25		49	0	28°	27	54		17		43
52	47	9		26	40	59	2	48	2		0	18		20		40
1854	48	46	22	35	42	40		47	3		41	23	48	51	11	9
56	50	31		42	44	28		46	5		29	27	49	7	10	53
58	52	19		46	46	19		45	7		20	18		17		43
60	54	6		45	48	10		44	9		11	27		18		42
62	55	48		42	49	55	2	43	10		56	28		14		46
1864	57	23	22	38	51	33		42	12		34	30	49	9	10	51
66	58	51		37	53	4		40	14		5	32		11		49
68	0	87° 17		38	54	33		40	15		33	33		14		46
70	1	46		44	56	5		39	17		5	35		28		32
72	3	22	22	52	57	44	2	38	18		44	36	49	46	10	14
1874	5	5	23	0	59	27° 30		37	20		30	38	50	3	9	57
76	6	52		5	1	21		36	22		20	40		14		46
78	8	40		5	3	12		35	24		12	42		17		43
80	10	24	23	2	4	59		34	25		59	44		14		46
82	12	1	22	58	6	39	2	33	27		38	45		8		52
1884	13	31		55	8	12		33	29		11	47	50	5	9	55
86	14	58	22	56	9	41		32	30		40	48		9		51
88	16	25	23	1	11	12		31	32		10	50		20		40
90	17	58		8	12	48		30	33		47	51		36		24
1892	19	39		16	14	32	2	28	35		31	53	50	53	9	7
94	21	26		22	16	22		28	37		20	55	51	6	8	54
96	23	14		24	18	14		26	39		12	57		16		48
98	24	59	23	21	20	3		25	41		1	59		5		51
1900	26	39		17	21	45		25	42		43	0	26° 48	51	3	8	57
04	29	37		12	24	50	2	23	45		47	3		52	50	59	9	1
08	32	35		23	27	53		21	48		50	6		56	51	22	8	38
12	35	59	23	37	31	23		19	52		20	10		27	51	53		7
16	39	34		38	35	6		17	56		2	14		10	52	0		0
1920	42	50		30	38	28		16	59	29°	23	17		32	51	47		13
24	45	45		30	41	28	2	14	2		24	20		32	51	51	8	9
28	48	50	23	43	44	39		12	5		35	23		44	52	20	7	40
32	52	22		54	48	18		10	9		13	27		23		44		16
1936	55	33		57	51	35		8	12		30	30		40	52	53	7	7
40	58	88° 44	23	59	54	52	2	6	15		47	33		58	53	1	6	59
44	1	56	24	1	58	28° 10		4	19		4	37		16		7		53
48	5	8		2	1	29		2	22		22	40		35		13		47

α Crucis, 13.

Date.	R. Asc.		Decl.		Long.		Lat.		*		*		
Jan.1.	184°		62° s.		♏ 9°		52° s.		♒ 5°		♐ 13°		
	′	″	′	″	′	″	′	″	′	″	′	″	
1824	13	24	7	27	26	21	51	36	20	48	31	54	
26	15	14	8	6	28	0		37	22	30	33	30	
28	16	53	8	43	29	32		37	24	3	35	1	
30	18	22	9	18	31	0		38	25	33	36	28	
32	19	44	9	55	32	30		39	27	4	37	56	Has no
1834	21	7	10	33	34	3	51	40	28	40	39	27	
36	22	36	11	15	35	45		41	30	24	41	7	
38	24	16	11	59	37	38		45	32	24	42	53	
40	26	5	12	44	39	25		43	34	8	44	43	
42	27	59	13	27	41	14		44	35	58	46	31	
1844	29	51	14	8	42	57	51	44	37	41	48	12	
46	31	35	14	45	44	30		44	39	15	49	45	
48	33	7	15	21	46	0		46	40	48	51	13	
50	34	31	15	56	47	28		46	42	17	52	40	Parallels
52	35	53	16	34	49	1		47	43	51	54	11	
1854	37	20	17	15	50	41	51	48	45	33	55	49	
56	38	56	17	58	52	28		49	47	22	57	34	
58	40	43	18	43	54	19		50	49	15	59	14° 23	
60	42	37	19	27	56	9		51	51	6	1	12	on the
62	44	31	20	8	57	54		51	52	51	2	56	
1864	46	18	20	47	59	10° 30	51	52	54	30	4	31	
66	47	54	21	23	1	0		53	56	2	5	59	
68	49	21	21	58	2	28		54	57	31	7	25	
70	50	43	22	35	3	59		54	59	6° 4	8	55	ecliptic.
72	52	8	23	15	5	37	51	55	0	43	10	31	
1874	53	41	23	57	7	22		56	2	30	12	14	
76	55	25	24	42	9	11		57	4	21	14	1	
78	57	18	25	26	11	3		58	6	15	15	51	
80	59	185° 13	26	9	12	50	51	59	8	3	17	36	
82	1	3	26	48	14	29	52	0	9	43	19	15	
1884	2	44	27	24	16	1		0	11	16	20	45	
86	4	13	28	0	17	29		1	12	46	22	12	Rubbishy stuff
88	5	36	28	36	18	58		2	14	17	23	40	in 'strology books:—
90	6	59	29	15	20	34		3	15	54	25	13	"part of fortune,"
1892	8	30	29	56	22	16	52	3	17	38	26	55	"hyleg," "poles" &
94	10	12	30	41	24	6		4	19	29	28	42	
96	12	2	31	25	25	56		5	21	22	30	31	"orbs" of planets etc.,
98	13	58	32	8	27	45		6	23	12	32	17	"platic & partile,"
1900	15	51	32	49	29	27		7	24	56	33	58	"dragon's head &
04	19	7	34	1	32	29	52	8	28	1	36	57	tail," "cazimi"—
08	21	54	35	15	35	31		10	31	5	39	56	
12	25	1	36	39	38	59		12	34	37	43	21	all the various
16	28	46	38	8	42	40		13	38	21	46	59	jargon, blunders
1920	32	28	39	27	46	0		15	41	44	50	16	and flimsy
24	35	31	40	38	48	57	52	16	44	44	53	10	figments, old or new.
28	38	20	41	55	52	7		18	47	57	56	17	
32	41	42	43	22	55	43		20	51	37	59	15° 50	
1936	44	58	44	41	58	11° 59		21	54	55	3	2	
40	48	15	45	59	2	14	52	23	58	7° 14	6	14	
44	51	33	47	18	5	30		24	1	33	9	27	
48	54	53	48	36	8	47		26	4	52	12	41	

Aldebaran, 14.

Date.	R. Asc.		Decl.		Long.		Lat.		✳		✳		Par. decl. n.			
Jan. 1.	66°		16° n.		♊ 7°		5° s.		♈ 7°		♌ 7°		♉ 14°		♌ 15°	
	′	″	′	″	′	″	′	″	′	″	′	″	′	″	′	″
1824	27	45	8	56	20	4	28	47	29	11	10	57	18	37	41	23
26	29	29	9	6	21	43		46	30	50	12	36	19	28	40	32
28	31	4		16	23	16		46	32	23	14	9	20	15	39	45
30	32	36		28	24	46		46	33	53	15	39	21	0	39	0
32	34	7	9	45	26	16		45	35	23	17	9	21	53	38	7
1834	35	45	10	4	27	53	28	44	37	0	18	46	22	49	37	11
36	37	31		26	29	36		43	38	43	20	29	23	53	36	7
38	39	23	10	46	31	26		43	40	33	22	19	24	54	35	6
40	41	17	11	4	33	17		42	42	24	24	10	25	57	34	3
42	43	10		17	35	7		42	44	14	26	0	26	52	33	8
1844	44	56		27	36	50	28	41	45	57	27	43	27	41	32	19
46	46	34		36	38	26		41	47	33	29	19	28	26	31	34
48	48	7	11	47	39	56		41	49	3	30	49	29	11	30	49
50	49	38	12	2	41	25		41	50	32	32	18	30	0	30	0
52	51	13		21	42	59		40	52	5	33	51	30	55	29	5
1854	52	56	12	42	44	40	28	40	53	47	35	33	31	55	28	5
56	54	46	13	3	46	28		39	55	35	37	21	32	57	27	3
58	56	40		22	48	20		38	57	26	39	13	34	1	25	59
60	58	67° 34		36	50	10		38	59	8° 17	41	3	34	57	25	3
62	0	23		46	51	55		38	1	2	42	49	35	46	24	14
1864	2	3	13	56	53	33	28	37	2	40	44	27	36	36	23	24
66	3	37	14	6	55	4		37	4	11	45	58	37	21	22	39
68	5	8		20	56	33		36	5	40	47	27	38	9	21	51
70	6	42		37	58	5		35	7	12	48	59	39	0	21	0
72	8	23	14	57	59	8° 44		35	8	51	50	38	39	56	20	4
1874	10	11	15	19	1	30	28	34	10	37	52	24	41	0	19	0
76	12	4		38	3	21		34	12	28	54	15	42	2	17	58
78	13	59	15	53	5	13		33	14	19	56	6	43	0	17	0
80	15	49	16	5	7	0		33	16	7	57	54	43	52	16	8
82	17	33		14	8	40		33	17	47	59	8° 34	44	39	15	21
1884	19	8		23	10	11	28	32	19	18	1	5	45	25	14	35
86	20	40		36	11	42		32	20	49	2	36	46	11	13	49
88	22	12	16	52	13	13		31	22	19	4	6	47	2	12	58
90	23	50	17	12	14	50		30	23	56	5	43	47	58	12	2
1892	25	37		33	16	33		30	25	40	7	27	48	59	11	1
94	27	29	17	53	18	23	28	29	27	30	9	17	49	59	10	1
96	29	23	18	9	20	15		28	29	21	11	9	50	59	9	1
98	31	16		21	22	4		28	31	10	12	58	51	53	8	7
1900	33	2		31	23	47		28	32	53	14	41	52	41	7	19
04	36	8	18	51	26	51		25	35	57	17	45	54	10	5	50
08	39	19	19	25	29	54	28	26	39	0	20	48	55	53	4	7
12	42	53	20	6	33	25		25	42	31	24	19	57	52	2	8
16	46	42		36	37	8		24	46	14	28	2	59	15° 47	0	14° 13
1920	50	10	20	55	40	30		23	49	35	31	24	1	22	58	38
24	53	15	21	19	43	29	28	22	52	35	34	23	2	53	57	7
28	56	68° 30	21	56	46	41		21	55	46	37	35	4	41	55	19
32	0	14	22	35	50	19		20	59	9° 25	41	14	6	41	53	19
1936	3	36	23	4	53	37		19	2	42	44	31	8	23	51	37
40	6	59		19	56	9° 52	28	18	5	58	47	47	9	21	50	39
44	10	22	23	59	0	12		17	9	18	51	7	11	46	48	14
48	13	46	24	26	3	31		16	12	36	54	25	13	27	46	33

Spica, 15.

Date.	R. Asc.		Decl.		Long.		Lat.		✳		✳		Par. decl. s.			
Jan.1.	198°		10° s.		♎ 21°		2° s.		♌ 21°		♐ 21°		♎ 26°		♓ 3°	
	′	″	′	″	′	″	′	″	′	″	′	″	′	″	′	″
1824	58		14	30	23	13	2	34	24	29	21	57	31	22	28	38
26	0	199° 59	15	6	24	53		34	26	9	23	38	33	10	26	50
28	2	10	15	40	26	32		32	27	48	25	17	34	49	25	11
30	3	44	16	13	28	11		29	29	27	26	55	36	24	23	36
32	5	18	16	48	29	50		26	31	5	28	34	37	58	22	2
1834	6	51	17	26	31	29	2	25	32	45	30	14	39	39	20	21
36	8	25	18	7	33	10		27	34	26	31	54	41	26	18	34
38	9	59	18	49	34	52		31	36	7	33	36	43	21	16	39
40	11	39	19	32	36	40		33	37	55	35	24	45	21	14	39
42	13	23	20	12	38	29		34	39	45	37	13	47	17	12	43
1844	15	1	20	49	40	12	2	34	41	27	38	56	49	7	10	53
46	16	31	21	23	41	47		34	43	3	40	31	50	49	9	11
48	17	56	21	56	43	17		35	44	32	42	1	52	25	7	35
50	19	20	22	30	44	46		35	46	2	43	30	53	58	6	2
52	20	47	23	7	46	19		36	47	35	45	3	55	36	4	24
1854	22	21	23	47	48	0	2	36	49	16	46	45	57	20	2	40
56	24	2	24	29	49	48		37	51	4	48	32	59	27° 13	0	2° 47
58	25	46	25	12	51	40		38	52	56	50	24	1	12	58	48
60	27	31	25	53	53	30		38	54	46	52	14	3	10	56	50
62	29	11	26	30	55	15		39	56	31	53	59	5	0	55	0
1864	30	44	27	5	56	53	2	39	58	9	55	37	6	46	53	14
66	32	10	27	38	58	24		40	59	22° 40	57	8	8	23	51	37
68	33	33	28	12	59	22° 53		40	1	9	58	22° 37	9	58	50	2
70	34	59	28	48	1	24		41	2	40	0	9	11	34	48	26
72	36	31	29	27	3	3		42	4	19	1	47	13	16	46	44
1874	38	10	30	9	4	49	2	42	6	5	3	33	15	7	44	53
76	39	54	30	51	6	40		43	7	56	5	24	17	4	42	56
78	41	39	31	33	8	31		44	9	47	7	15	19	3	40	57
80	43	21	32	12	10	18		44	11	34	9	2	20	57	39	3
82	44	56	32	47	11	58		45	13	14	10	42	22	44	37	16
1884	46	24	33	20	13	31	2	45	14	47	12	15	24	23	35	37
86	47	48	33	53	15	0		46	16	16	13	44	25	58	34	2
88	49	12	34	28	16	30		46	17	46	15	14	27	33	32	27
90	50	42	35	7	18	6		47	19	23	16	50	29	13	30	47
1892	52	19	35	48	19	50		47	21	7	18	34	31	2	28	58
94	54	2	36	30	21	40	2	48	22	56	20	24	32	57	27	3
96	55	47	37	12	23	32		49	24	48	22	16	34	57	25	3
98	57	30	37	52	25	21		49	26	37	24	5	36	53	23	7
1900	59	200° 8	38	28	27	3		50	28	19	25	47	38	42	21	18
04	2	3	39	35	30	7		50	31	23	28	51	41	59	18	1
08	4	54	40	46	33	10	2	52	34	26	31	54	45	11	14	49
12	8	10	42	9	36	40		53	37	56	35	24	48	51	11	9
16	11	40	43	32	40	23		54	41	39	39	7	52	48	7	12
1920	14	52	44	43	43	44	2	56	45	0	42	28	56	24	3	36
24	17	42	45	49	46	43		57	48	0	45	27	59	28° 36	0	1° 24
28	20	40	47	5	49	54		58	51	11	48	38	2	56	57	4
32	24	5	48	29	53	33	2	59	54	49	52	16	6	45	53	15
1936	27	10	49	43	56	23° 50	3	0	58	23° 6	55	33	10	15	49	45
40	30	17	50	57	0	7		1	1	23	58	23° 50	13	44	46	16
44	33	23	52	11	3	24		3	4	41	2	8	17	14	42	46
48	36	31	53	24	6	43		4	7	59	5	26	20	45	39	15

Antares, 16.

Date.	R. Asc.	Decl.	Long.	Lat.	✱	✱	
Jan. 1.	244°	26° s.	♐ 7°	4° s.	♎ 7°	♒ 7°	
	′ ″	′ ″	′ ″	′ ″	′ ″	′ ″	
1824	39 46	2 1	18 37	32 46	24 54	12 21	Has no
26	41 37	13	20 18	47	26 34	14 2	
28	43 20	24	21 51	48	28 7	15 35	
30	44 57	38	23 20	49	29 36	17 3	
32	46 35	2 56	24 50	50	31 6	18 33	Parallels
1834	48 19	3 18	26 26	32 52	32 42	20 9	
36	50 10	3 41	28 9	53	34 26	21 53	
38	52 10	4 3	29 59	55	36 15	23 42	
40	54 12	22	31 50	56	38 7	25 34	on the
42	56 12	37	33 40	32 56	39 56	27 23	
1844	58 6	4 49	35 23	57	41 39	29 6	
46	59 245° 51	5 0	36 58	58	43 15	30 41	
48	1 30	13	38 28	32 59	44 44	32 11	ecliptic.
50	3 7	29	39 57	33 0	46 14	33 40	
52	4 49	5 50	41 31	1	47 47	35 14	
1854	6 38	6 13	43 12	2	49 28	36 55	
56	8 35	35	45 0	3	51 16	38 43	
58	10 37	6 55	46 51	4	53 8	40 34	The ☽ and
60	12 39	7 11	48 42	33 5	54 59	42 25	some of
62	14 35	23	50 27	6	56 44	44 10	the planets
1864	16 23	34	52 4	7	58 21	45 47	
66	18 4	7 46	53 36	8	59 8° 53	47 19	
68	19 41	8 1	55 4	9	1 21	48 47	may at times
70	21 21	20	56 36	33 10	2 53	50 19	reach its
72	23 7	8 43	58 8° 15	11	4 32	51 58	Par. decl.
1874	25 2	9 5	0 1	12	6 18	53 44	
76	27 3	26	1 52	14	8 9	55 35	
78	29 6	43	3 43	15	10 1	57 26	
80	31 4	9 56	5 30	33 15	11 48	59 8° 13	
82	32 55	10 7	7 10	16	13 28	0 53	
1884	34 38	18	8 43	17	15 1	2 26	
86	36 15	32	10 12	18	16 30	3 55	
88	37 54	10 50	11 42	19	18 0	5 25	Very many
90	39 38	11 11	13 19	33 20	19 36	7 1	large errors
1892	41 31	34	15 3	21	21 20	8 45	each year
94	43 30	11 55	16 53	22	23 10	10 35	*fudged*
96	45 33	12 13	18 44	24	25 2	12 27	
98	47 33	27	20 33	25	26 51	14 15	into the base
1900	49 27	12 38	22 16	33 26	28 34	15 58	Raskael
04	52 50	13 1	25 20	27	31 38	19 2	ephemeris,
08	56 9	13 38	28 23	29	34 41	22 5	550 in 1898 !
12	59 246° 58	14 22	31 53	31	38 11	25 35	
16	4 2	14 56	35 36	33	41 54	29 18	Badkiel's
1920	7 46	15 18	38 57	33 35	45 16	32 39	has a tenth
24	11 3	15 44	41 57	37	48 15	35 38	as many —
28	14 31	16 25	45 8	39	51 26	38 49	there is
32	18 29	17 7	48 46	41	55 5	42 27	
1936	22 5	17 39	52 3	33 43	58 9° 22	45 44	*some* choice
40	25 42	18 10	55 20	45	1 39	49 2	in
44	29 19	18 40	58 9° 38	47	4 57	52 19	rotten eggs.
48	32 57	19 11	1 56	48	8 15	55 37	

As an after-thought this page is inserted to facilitate the use of the preceding tables. Here is the approximate place of each star's aspects, etc., at the middle date of the tables, 1886, thus showing at a glance about where they are all around the circle at any time in the whole period. Thereby the houses they come in for any figure may be determined before getting their more exact places. The only points here not on the ecliptic are the ☌ and ☍ given of the three stars having but little latitude. See the gaunt poverty of the current system that omits all these! Such a table made with exactness for a figure of birth, and completed by putting in the aspects of the planets, will manifestly be of great use in several ways.

♈♒	♈♒	♉♑	♌♓
° ′ △	° ′	° ′ △	° ′ ✶
6 13 *a* Crucis ✶	27 26 Par. Spica	8 3 *β* Centaur. ✶	28 15 Arcturus △
6 21 *β* Centaur. ✶	28 31 *a* Orionis △	15 18 *a* Centaur. ✶	✶ 2 4 Sirius △ ♍♓
8 17 Antares ✶ ♂♏	0 10 □ Altair	22 15 □ Spica	2 34 Par. Spica
8 21 Aldebaran △	14 46 Par. Aldeb	22 39 □ Arcturus	△ 2 38 *a* Eridani ✶
10 48 *a* Centaur. ✶	15 45 Par. Sirius	1 46 Par. Arctu. ♌♒	8 1 Par. Altair
12 31 □ Sirius	✶ 22 57 Sirius △	✶ 8 3 Aldebaran △	8 10 □ Antares
13 23 □ Canopus	✶ 25 33 Procyon △	△ 8 4 Antares ✶	8 12 □ Aldeb.
13 43 □ Vega	28 14 Par. Arctu	✶ 9 30 Rigel △	8 38 Par. Rigel
13 58 Par. Procy.	△ 5 9 Altair ✶ ♃♐	10 17 □ *a* Crucis	11 10 Par. *a* Orion
18 50 Par. *a* Orion	☍ 8 10 Antares ☌	14 15 Par. Sirius	15 14 □ Rigel
✶ 20 59 Rigel △	☌ 8 12 Aldebaran ☍	15 14 Par. Aldeb.	16 2 Par. Procy
21 22 Par. Rigel	13 41 □ *a* Eridani	✶ 17 24 Capella △	20 16 □ Capella
21 59 Par. Altair	△ 14 22 *a* Crucis ✶	22 12 □ *β* Centaur.	✶ 22 52 Procyon △
☍ 22 15 Spica ☌	△ 17 2 Arcturus ✶	✶ 22 16 Spica △	△ 24 45 *a* Eridani ✶
✶ 23 8 Capella △	△ 22 14 Spica ✶	✶ 25 49 *a* Orionis △	△ 25 11 Altair ✶
24 13 □ Procyon		28 3 □ *a* Centaur.	27 10 □ *a* Orion

URANUS AND NEPTUNE.

For many years of the present century there is, for very good reasons, no accurate Ephemeris of these two planets. That of Urănus in the Nautical Almanac from 1834 to 1877 is largely wrong, so that the resulting longitude is in error sometimes nearly 4′; but beginning with 1877 its places of this planet, by use of the new American or French tables, are as exact as the lame theories of astronomy will permit. Neptune was not discovered until 1846, and there are no reliable positions until the American Ephemeris in 1870, and the Nautical Almanac in 1871, began to use the new tables by Newcomb.

Because of such conditions, and that those works do not give the geocentric longitudes at all, the present writer has computed an Ephemeris in longitude of both planets covering the period mentioned. It is made to the nearest second of arc for every fifth day, and is still in MS. The places of Urănus were derived, at intervals of 15 days, from the heliocentric places in the Nautical Almanac; then "observed corrections" were applied, obtained from those given in Newcomb's work on the planet; and finally interpolated with fifth differences to 5-day intervals. This method gives results nearly as precise as would be if they could have been *taken by observation* with the great telescopes on each date.

For Neptune, up to 1871 the heliocentric longitudes, etc., were computed at intervals of 180 days by the American tables, and interpolated to each 15th day. From these the geocentric places were derived by usual methods and interpolated with fifth differences to each 5th day. For and after 1871 the heliocentric places in the Nautical Almanac were used, and the same operations performed. The aberration of each planet was omitted, so that the results are *true* apparent positions. All this made an enormous job for one person, but was done with extreme care, and a complete system of checks to insure against error.

The Ephemeris herein is an abridgment of the other by taking intervals of ten days and reducing the figures to nearest tenth of a minute. In getting intermediates the error may be always much less than 1′, with proper interpolation. The dates are for Greenwich mean noon.

When the planets are stationary it is indicated by "St.," with the day of the month.

Uranus.			Neptune.		Uranus.			Neptune.	
Date.	Long.	Lat.	Long.	Lat.	Date.	Long.	Lat.	Long.	Lat.
1835.	♒	0° s.	♒	0° n.	1836.	♓	0° s.	♒	0° n.
	0 ′	′	0 ′	′		0 ′	′	0 ′	′
Jan. 4	24 14.8	42.7	0 38.2	15.8	May 28	4 28.5	45.6	5 33.6	10.9
14	24 44.4	42.5	1 0.5	15.7	June 7	8 St. 31.4	46.0	45.8	10.8
24	25 16.3	42.4	1 23.3	15.6	17	29.6	46.3	35.3	10.8
Feb. 3	25 49.8	42.3	1 45.8	15.5	27	23.0	46.7	22.7	10 7
13	26 24 2	42.3	2 7.8	15.4	July 7	4 12.0	47.1	5 8.3	10.6
23	26 58.8	42.3	2 28.6	15.4	17	3 56.9	47.4	4 52.7	10.5
Mar. 5	27 32.8	42.4	2 47.7	15.3	27	3 38 5	47 6	36.6	10 4
15	28 5.6	42.6	3 4.8	15.3	Aug. 6	3 17 4	47.8	20.4	10.3
25	28 36.4	42.8	19.5	15.2	16	2 54.5	47.9	4 4.7	10 1
Apr. 4	29 4.7	43.0	31.2	15.2	26	2 30 7	47.9	3 50.3	10.0
14	29 29.8	43.3	8 St. 40.1	15.2	Sept. 5	2 6.9	47.9	37.7	9.9
24	29 51.2	43.6	45.8	15.1	15	1 44.2	47.8	27.2	9.7
May 4	♓ 0 8.5	44.0	3 47.8	15.1	25	1 23.6	47.6	19.5	9.6
14	21.4	44.4	47.0	15.1	Oct. 5	1 5.8	47.4	14.8	9.4
24	29.5	44.8	42.8	15.1	15	0 51.7	47.1	14 St. 3 13.2	9 2
June 3	5 St. 0 32.9	45.2	35.8	15.0	25	41.8	46.8	15.0	9.1
13	31.3	45.6	25.9	15.0	Nov. 4	10 St. 36.7	46.4	20.2	8.9
23	25.0	45.9	3 13.8	14.9	14	36.6	46.0	28.7	8.7
July 3	♒ 0 14 2	46.3	2 59.8	14.8	24	41.7	45.7	40.4	8.6
13	29 59.4	46.5	44.5	14.7	Dec. 4	0 51.8	45.3	3 54 8	8 4
23	29 41.2	46.8	28.4	14.6	14	1 6.7	44.9	4 11.9	8.3
Aug. 2	29 20.3	47.0	2 12.1	14.5	24	1 26.2	44 6	4 31.1	8.2
12	28 57.5	47.2	1 56.3	14.4	'37, J. 3	1 49 7	44.3	4 51.8	8 0
22	28 33.7	47.2	41.6	14.2	13	2 16.7	44.1	5 13.8	7.9
Sept. 1	28 9 9	47.2	28.5	14.1	23	2 46.6	43.9	5 36.5	7.8
11	27 47.1	47.1	17.5	13 9	Feb. 2	3 18.8	43.7	5 59 2	7 7
21	27 26.3	46.9	9.0	13.7	12	3 52.4	43.7	6 21.6	7.6
Oct. 1	27 8.3	46.7	1 3.5	13.5	22	4 26.7	43.6	6 43 0	7.5
11	26 53.9	46.4	12 St. 1.1	13.3	Mar. 4	5 1.1	43.7	7 2.9	7.4
21	43.8	46.1	2.1	13.2	14	5 34.9	43.8	21.1	7.3
31	6 St. 38.3	45.8	6.4	13 0	24	6 7.3	43.9	37.0	7.2
Nov. 10	37.9	45.4	1 14.2	12.8	Apr. 3	6 37.6	44.1	7 50.2	7.2
20	42.5	45.0	25.0	12.6	13	7 5.3	44.3	8 0.6	7.1
30	26 52.3	44.7	38.7	12.5	23	7 29.8	44.6	7.8	7.0
Dec. 10	27 6.9	44.3	1 55.2	12.3	May 3	7 50.6	45.0	11.7	6.9
20	27 26.0	44.0	2 13.8	12.1	13	8 7.3	45.3	St. 12.4	6 9
30	27 49.3	43.7	2 34.2	12 0	23	19.5	45.7	9.8	6 8
'36, J. 9	28 16.1	43.5	2 55.9	11.9	June 2	26.9	46.1	8 4.2	6.7
19	28 45.8	43.3	3 18.4	11.8	12	8 29.6	46.5	7 55 7	6.6
29	29 17.8	43.2	3 41.2	11.7	22	13 St. 27.4	46.9	44.7	6.6
Feb. 8	29 51.4	43.1	4 3.7	11.6	July 2	20.5	47.3	31.5	6.5
18	♓ 0 25.8	43.1	4 25.4	11.5	12	8 9.2	47.6	16.8	6.4
28	1 0.3	43.1	4 45 9	11.4	22	7 53.9	47.9	7 1.1	6.3
Mar. 9	1 34.2	43.2	5 4.5	11.3	Aug. 1	7 35.3	48.1	6 44.8	6.1
19	2 6.7	43.3	21.0	11.3	11	7 14.0	48.3	6 28.6	6 0
29	2 37.3	43.5	34.9	11.2	21	6 51.0	48.4	6 13.3	5.9
Apr. 8	3 5.3	43.8	5 46.0	11.1	31	6 27.1	48.4	5 59.2	5.8
18	3 30.1	44.1	54.0	11.1	Sept 10	6 3.4	48.4	47.0	5.6
28	3 51.2	44.4	5 58.8	11.0	20	5 40.8	48.3	37.3	5.5
May 8	4 8.2	44.8	10 St. 6 0.2	11.0	30	5 20.3	48.1	30.2	5.4
18	4 20.7	45.2	5 58.5	10.9	Oct. 10	5 2.7	47.8	26.2	5.2

Uranus.			Neptune.		Uranus.			Neptune.	
Date.	Long.	Lat.	Long.	Lat.	Date.	Long.	Lat.	Long.	Lat.
1837.	♓	o° s.	♒	o° n.	1839.	♓	o° s.	♒	o° s.
	o /	/	o /	/		o /	/	o /	/
Oct. 10	5 2.7	47.8	17 St. 5 26.2	5.2	Mar. 4	12 27.5	44.1	11 18.2	0.5
20	4 48.9	47.5	25.6	5.1	14	13 1.8	44.2	11 37.4	0.7
30	39.4	47.2	28.3	4.9	24	13 35.3	44.3	11 54.4	0.8
Nov. 9	34.7	46.8	34.4	4.8	Apr. 3	14 7.3	44.4	12 8.9	0.9
19	14 St. 35.0	46.4	43.7	4.6	13	14 37.2	44.6	20.8	1.0
29	40.4	46.0	5 56.1	4 5	23	15 4.4	44.8	29.5	1.1
Dec. 9	4 50.9	45.7	6 11.3	4.4	May 3	15 28.3	45.1	35.1	1.2
19	5 6.2	45.3	6 28.9	4.2	13	15 48.5	45.5	17 St. 37.4	1.3
29	5 26.0	45.0	6 48.5	4.1	23	16 4.5	45.8	12 36.5	1.5
'38, J. 8	5 49.8	44.7	7 9.7	4.0	June 2	16.0	46.2	32.4	1.6
18	6 17.0	44 4	7 31.9	3.9	12	12 St. 22.9	46.6	25.3	1.7
28	6 47.1	44.2	7 54.5	3.8	22	16 24.8	47.0	15.5	1.8
Feb. 7	7 19.3	44.1	8 17.3	3.7	July 2	22.0	47.3	12 3 4	1.9
17	7 52.9	44.0	8 39.6	3.6	12	14.5	47.7	11 49.4	2.1
27	8 27.3	44.0	9 0.6	3.5	22	16 2.6	48.0	34.1	2.2
Mar. 9	9 1.6	44.0	20.1	3.4	Aug. 1	15 46.9	48.3	18.0	2.3
19	9 35.2	44.1	37.7	3.3	11	15 27.8	48.5	11 1.7	2.4
29	10 7.4	44.2	9 53 0	3.2	21	15 6.2	48.7	10 45.8	2.5
Apr. 8	10 37.5	44.4	10 5.5	3.1	31	14 43.0	48.7	31.0	2.6
18	11 5.0	44.7	15.0	3.0	Sept 10	14 19.0	48.8	17.9	2.7
28	11 29.2	45.0	21.5	2.9	20	13 55.4	48.7	10 6.9	2.8
May 8	11 49.7	45.3	15 St. 24.6	2.8	30	13 33.0	48.5	9 58.4	2.9
18	12 6.0	45.7	10 24.5	2.7	Oct. 10	13 12.8	48.3	52.9	3.0
28	17.9	46.0	21.1	2.6	20	12 55.8	48.1	21 St. 50.6	3.1
June 7	25.0	46.4	14.7	2.5	30	42.5	47.7	51.6	3.2
17	St. 27.3	46.8	10 5.6	2.4	Nov. 9	33.7	47.4	9 56.0	3.3
27	24.7	47.2	9 54.0	2.3	19	12 29.7	47.0	10 3.7	3.4
July 7	12 17.5	47.6	40.4	2.2	29	22 St. 30.8	46.6	14.7	3.5
17	12 6.0	47.9	25.4	2.1	Dec. 9	37.1	46.2	28.6	3.6
27	11 50.5	48.2	9 9.4	2.0	19	12 48.3	45.8	10 45.1	3.7
Aug. 6	11 31.6	48.4	8 53.1	1.9	29	13 4.4	45.4	11 3.8	3.8
16	11 10.2	48.6	37.1	1.7	'40, J. 8	13 24.8	45.1	11 24.3	3.9
26	10 47.1	48.7	22.1	1.6	18	13 49.2	44.8	11 46.0	4.0
Sept. 5	10 23.2	48.7	8 8.4	1.5	28	14 16.9	44.5	12 8.6	4.1
15	9 59.5	48 6	7 56.8	1.4	Feb. 7	14 47.3	44.3	12 31.4	4.2
25	9 37.0	48.5	47.7	1.3	17	15 19.7	44.2	12 53.8	4 3
Oct. 5	9 16.6	48.3	41.4	1.1	27	15 53.4	44.1	13 15.6	4.4
15	8 59.3	48.1	19 St. 38.2	1.0	Mar. 8	16 27.8	44.1	13 36.0	4.6
25	45.8	47.8	7 38.4	0.9	18	17 1.9	44.1	13 54.5	4.7
Nov. 4	36.6	47.4	41.9	0.8	28	17 35.3	44.2	14 11.0	4.8
14	8 32.2	47.0	48.8	0.7	Apr. 7	18 7.1	44.3	25.0	5.0
24	18 St. 32.9	46.6	7 59.0	0.6	17	18 36.8	44.5	36.0	5.1
Dec. 4	38.7	46.2	8 12.1	0.4	27	19 3.8	44.8	44.0	5.2
14	8 49.6	45.8	8 28 0	0.3	May 7	19 27.4	45.0	48.8	5.4
24	9 5.3	45.5	8 46.2	0 2	17	19 47.3	45.4	14 50.3	5.5
'39, J. 3	9 25.4	45 1	9 6.2	0.1	27	20 3.0	45.7	19 St. 48.6	5.7
13	9 49.5	44.8	9 27.8	0.0	June 6	14.2	46.1	43.7	5.8
23	10 17.0	44.6	9 50.1	0 s.1	16	25 St. 20.7	46.5	35.9	6.0
Feb. 2	10 47 2	44.4	10 12.9	0.2	26	22.3	46 8	25.5	6.1
12	11 19.5	44.3	35.6	0.3	July 6	19.1	47.2	14 12.9	6.2
22	11 53.2	44.2	57.5	0.4	16	20 11.3	47.6	13 58.6	6.3

Uranus.			Neptune.		Uranus.			Neptune.	
Date.	Long.	Lat.	Long.	Lat.	Date.	Long.	Lat.	Long.	Lat.
1840.	♓	0° s.	♒	0° s.	1841.	♓	0° s.	♒	0° s.
	° ′	′	° ′	′		° ′	′	° ′	′
July 16	20 11.3	47.6	13 58.6	6.3	Dec. 8	20 26.7	45.8	14 47.2	11.7
26	19 59.2	47.9	42.9	6.5	18	20 33.8	45.4	15 2.5	11.7
Aug. 5	43.2	48.1	26.7	6.6	28	20 45.9	45.1	15 20.2	11.8
15	24.0	48.3	13 10.5	6.7	'42, J. 7	21 2.7	44 7	15 39.9	11.8
25	19 2.2	48.5	12 54.8	6.8	17	21 23.8	44.3	16 1.1	11 9
Sept. 4	18 38.9	48.6	40.4	6.9	27	21 48.7	44 0	16 23.4	12.0
14	18 14.9	48.6	27.7	7.0	Feb. 6	22 16.9	43.8	16 46.1	12.1
24	17 51.3	48.5	17.3	7.1	16	22 47.6	43.6	17 8.8	12.2
Oct. 4	17 29.0	48.3	12 9.5	7.2	26	23 20.2	43.5	17 31.0	12.4
14	17 9.0	48.1	23 St. 4.8	7.3	Mar. 8	23 54.1	43.4	17 52.1	12.5
24	16 52.2	47.8	3.3	7.3	18	24 28.4	43.3	18 11.7	12.6
Nov. 3	39.3	47.5	5.2	7.4	28	25 2.4	43.3	29.3	12.8
13	30.8	47.1	12 10.5	7.5	Apr. 7	25 35.5	43.4	44.4	13.0
23	26 St. 16 27.3	46.7	19.0	7.5	17	26 7.0	43 6	18 56.9	13.1
Dec. 3	28.7	46.3	30.8	7.6	27	26 36.3	43.8	19 6.5	13.3
13	35.3	45.9	12 45.4	7.7	May 7	27 2.8	44.0	12.9	13.5
23	16 47.0	45.5	13 2.5	7.8	17	27 25.9	44.3	16.1	13.7
'41, J. 2	17 3.4	45.1	13 21.7	7.8	27	27 45.3	44.6	24 St. 16.0	13.9
12	17 24.2	44.8	13 42.5	7.9	June 6	28 0.4	44.9	12.7	14.1
22	17 48.9	44.5	14 4.6	8.0	16	11.0	45.2	19 6.4	14.3
Feb. 1	18 16.8	44.3	14 27.3	8.1	26	16.8	45.6	18 57.3	14.4
11	18 47.4	44.1	14 50.0	8.2	July 6	4 St. 17.8	46.0	45.7	14.6
21	19 19.9	43.9	15 12.4	8.3	16	14 0	46.3	32.1	14.7
Mar. 3	19 53.7	43.8	15 33.8	8.5	26	28 5.6	46.6	17.1	14.9
13	20 28.0	43.8	15 53.7	8.6	Aug. 5	27 52.9	46.9	18 1.1	15.0
23	21 2.1	43.8	16 11.9	8.8	15	27 36.4	47.2	17 44.8	15.1
Apr. 2	21 35.3	43.9	27.7	8.9	25	27 16.8	47.4	28.8	15.2
12	22 7.0	44.1	40.9	9.1	Sept. 4	26 54.7	47.5	13.7	15.3
22	22 36.5	44.2	51.2	9.2	14	26 31.2	47.5	17 0.0	15.4
May 2	23 3.2	44.5	16 58.5	9.4	24	26 7.1	47.5	16 48.4	15.4
12	23 26.6	44.8	17 2.4	9.5	Oct. 4	25 43.6	47.4	39.2	15.5
22	23 46.2	45.1	21 St. 17 3.2	9.7	14	25 21.5	47.2	32.9	15.5
June 1	24 1.6	45.4	17 0.6	9.8	24	25 1.9	47.0	29.8	15.6
11	12.4	45.8	16 55.0	10.0	Nov. 3	24 45.6	46.7	28 St. 16 30.0	15.6
21	29 St. 18.6	46.1	46.6	10.2	13	33.3	46.3	33.6	15.6
July 1	20.0	46.5	35.6	10.3	23	25.6	46.0	40.6	15.6
11	16.5	46.9	22.5	10.5	Dec. 3	24 22.7	45.6	16 50.8	15.7
21	24 8.4	47.2	16 7.8	10.6	13	4 St. 25.1	45.2	17 4.0	15.7
31	23 55.9	47.5	15 52.0	10.7	23	32.6	44.7	20.0	15.7
Au. 10	23 39.7	47.8	35.7	10.8	'43, J. 2	24 45.0	44.4	38.3	15.8
20	23 20.2	48.0	19.5	11.0	12	25 2.2	44.0	17 58.4	15.8
30	22 58.3	48.1	15 4.1	11.1	22	25 23.7	43.6	18 19.9	15.9
Sept. 9	22 34.9	48.2	14 50.1	11.2	Feb. 1	25 48.9	43.4	18 42.4	16.0
19	22 10.9	48.1	37.9	11.2	11	26 17.3	43.1	19 5.2	16.1
29	21 47.3	48.1	28.1	11.3	21	26 48.2	42.9	19 27.8	16.2
Oct. 9	21 25.1	47.9	21.1	11.3	Mar. 3	27 20.9	42.8	19 49.7	16.3
19	21 5.3	47.7	26 St. 14 17.1	11.4	13	27 54.7	42.7	20 10.5	16.5
29	20 48.7	47.4	16.4	11.5	23	28 29.0	42.6	20 29.5	16.7
Nov. 8	36.1	47.0	19.2	11.5	Apr 2	29 3.0	42.7	20 46.6	16.8
18	28.0	46.7	25.3	11.6	12	29 36.0	42.7	21 1.2	17 0
28	30 St. 24.8	46.3	34.7	11.6	22	♈ 0 7.4	42.9	21 12.9	17.2

Uranus.			Neptune.		Uranus.			Neptune.	
Date.	Long.	Lat.	Long.	Lat.	Date.	Long.	Lat.	Long.	Lat.
1843.	♈	o° s.	♒	o° s.	1844.	♈	o° s.	♒	o° s.
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Ap. 22	0 7.4	42.9	21 12.9	17.2	Sept 13	4 48.6	45.5	21 33.3	23.7
May 2	0 36.5	43.1	21.7	17.4	23	4 24.8	45.6	20.5	23.7
12	1 2.8	43.3	27.4	17.6	Oct. 3	4 0.7	45.5	10.0	23.8
22	25.7	43.5	26 St. 29.7	17.8	13	3 37.2	45.4	21 2.2	23 8
June 1	44.7	43.8	21 28.8	18.0	23	3 15.4	45.2	20 57.5	23.8
11	1 59.6	44.2	24.8	18.3	Nov. 2	2 56.2	44.9	St. 20 56.0	23.8
21	2 9.8	44.5	17.7	18.5	12	40.4	44.6	20 58.0	23.7
July 1	15.4	44.8	21 8.0	18.7	22	28 7	44.3	21 3.3	23.7
11	8 St. 16.1	45.2	20 55.9	18.8	Dec. 2	21.7	43.9	12.0	23.7
21	12.0	45.5	41.9	19.0	12	St. 2 19 7	43.5	23.8	23 7
31	2 3.3	45.8	26.6	19.1	22	22.9	43.1	38.4	23.7
Au. 10	1 50.3	46.1	20 10.4	19.3	'45, J. 1	31.2	42.7	21 55.6	23.7
20	1 33.5	46.3	19 54.1	19.4	11	2 44.4	42.3	22 14 9	23.7
30	1 13.6	46.5	38.2	19.5	21	3 2.3	42.0	22 35 8	23.7
Sept. 9	0 51.4	46.6	23.4	19.6	31	3 24.4	41 6	22 57.9	23.8
19	0 27.8	46.7	19 10.2	19.6	Feb. 10	3 50.2	41.3	23 20.6	23.9
29	0 3.7	46.6	18 59.1	19.6	20	4 19.0	41.1	23 43.3	24.0
Oct. 9	♓ 29 40.2	46.5	50.6	19.7	Mar. 2	4 50.3	40.9	24 5.6	24.1
19	29 18 3	46.3	45.0	19 7	12	5 23.2	40.8	24 27.0	24.3
29	28 58.8	46.1	31 St. 18 42.8	19.7	22	5 57.2	40 7	24 47 0	24 5
Nov. 8	42.8	45.8	43.8	19.7	Apr. 1	6 31.5	40.6	25 5.1	24.7
18	30.8	45.4	48.3	19.7	11	7 5.3	40.7	20.9	24.9
28	23.4	45.0	18 56.1	19 7	21	7 38.1	40.7	34.1	25.1
Dec. 8	St. 28 21.0	44.6	19 7.2	19.7	May 1	8 9.2	40.9	44.4	25.4
18	23.8	44.2	21.1	19.7	11	8 38.0	41.0	51.7	25.6
28	31.7	43.8	37.7	19 7	21	9 3.9	41.2	25 55.7	25.9
'44, J. 7	28 44.5	43.4	19 56.5	19.8	31	26.3	41.5	St. 56 5	26.1
17	29 2.1	43.1	20 17.0	19.8	Jun. 10	44.9	41.7	54.0	26.4
27	29 23.9	42.8	20 38.9	19.9	20	9 59.2	42.0	48.5	26.6
Feb. 6	29 49 4	42.5	21 1.5	20.0	30	10 8.9	42.3	25 40.0	26.8
16	♈ 0 18.0	42.2	21 24.2	20.1	July 10	13.8	42.7	29.1	27.1
26	0 49.0	42.0	21 46.7	20.2	20	15 St. 13.9	43.0	16.0	27.2
Mar. 7	1 21.8	41.9	22 8.4	20.3	30	10 9.2	43.3	25 1.3	27.4
17	1 55.8	41.8	22 28.7	20.5	Aug. 9	9 59.8	43 6	24 45.4	27.6
27	2 30.0	41.8	22 47.4	20.7	19	46.3	43.8	24 29 1	27.7
Apr. 6	3 3.9	41.8	23 3.8	20.9	29	29 0	44.0	24 12.9	27.8
16	3 36.9	41.8	17.7	21.1	Sept. 8	9 8.7	44.1	23 57.4	27.8
26	4 8.1	42.0	28.8	21.3	18	8 46.1	44.2	43.3	27.9
May 6	4 37.0	42.1	36.8	21.5	28	8 22.3	44.2	31.0	27.9
16	5 3.1	42.4	41 6	21.8	Oct. 8	7 58.1	44.2	21.1	27.9
26	25.8	42.6	28 St. 23 43.2	22.0	18	7 34.7	44.0	23 14.1	27.9
June 5	44.6	42.9	41.5	22.2	28	7 12.9	43.9	10.1	27.8
15	5 59.1	43.2	36.6	22.4	Nov. 7	6 53.9	43.6	4 St. 9.5	27.8
25	6 9.1	43.5	28.9	22.6	17	38.4	43.3	12.2	27.7
July 5	14.4	43.9	18 6	22.8	27	27.0	42.9	23 18.4	27.7
15	11 St. 14.8	44.2	23 6.0	23.0	Dec. 7	20.4	42 6	27.9	27.6
25	10.3	44.5	22 51.6	23.2	17	15 St. 6 18.8	42.2	40.5	27.6
Aug. 4	6 1.3	44.8	36.0	23.4	27	22.3	41.8	23 55.8	27.6
14	5 48.0	45.1	19.8	23.5	'46, J. 6	31.1	41.4	24 13.6	27.6
24	5 31.1	45.3	22 3.5	23.6	16	6 44.7	41.0	33.3	27.6
Sept. 3	5 11.0	45.4	21 47.8	23.7	26	7 3.0	40.6	54.6	27.6

Uranus.			Neptune.		Uranus.			Neptune.	
Date.	Long.	Lat.	Long.	Lat.	Date.	Long.	Lat.	Long.	Lat.
1846.	♈	0° s.	♒	0° s.	1847.	♈	0° s.	♓	0° s.
	0 ′	′	0 ′	′		0 ′	′	0 ′	′
Jan.26	7 3.0	40.6	24 54.6	27.6	Jun.20	17 46.8	38.8	0 18.2	34.5
Feb. 5	7 25.4	40.3	25 16.9	27.7	30	18 0.6	39.1	0 11.2	34.8
15	7 51.5	40.0	25 39.6	27.8	July 10	9.7	39.4	♒ 0 1.4	35.1
25	8 20.5	39.8	26 2.3	27.9	20	14.1	39.6	29 49.3	35.3
Mar. 7	8 51.9	39.6	26 24.4	28.1	30	24 St. 13.5	39.9	35.3	35.5
17	9 24.9	39 5	26 45.5	28.2	Aug. 9	18 8.2	40.2	20.0	35.7
27	9 58.9	39.4	27 5.0	28.4	19	17 58.2	40.4	29 3.8	35.8
Apr. 6	10 33.3	39.3	22.6	28.6	29	44.1	40.6	28 47.4	35.9
16	11 7.1	39.4	37.7	28.9	Sept. 8	26.3	40.8	31.4	36.0
26	11 39.8	39.4	50.3	29.1	18	17 5.5	40.9	16.5	36 0
May 6	12 10 8	39.5	27 59.9	29.4	28	16 42.6	41.0	28 3.2	36 0
16	12 39.4	39.7	28 6.3	29.6	Oct. 8	16 18.5	40.9	27 52.0	36.0
26	13 5.1	39.9	9.5	29.9	18	15 54.3	40.9	43.4	35 9
June 5	27.3	40 1	1 St. 9.4	30.2	28	15 30.9	40.7	37.9	35.8
15	45.6	40.4	28 6.2	30.5	Nov. 7	15 9.4	40.5	9 St. 27 35.6	35.7
25	13 59.6	40.7	27 59.9	30.7	17	14 50.7	40.3	36.7	35.6
July 5	14 9.1	41.0	50.8	31.0	27	35.7	40.0	41.2	35.5
15	13.7	41 3	39.3	31.2	Dec. 7	25.0	39.6	27 49 1	35.4
25	20 St. 13.4	41.6	25.7	31.4	17	19.1	39.2	28 0.2	35.4
Aug. 4	14 8.4	41.8	27 10.7	31.6	27	24 St. 14 18.3	38.9	14.2	35.3
14	13 58.8	42.1	26 54.6	31.7	'48, J. 6	22.7	38.5	30.9	35.3
24	44.9	42.3	38.2	31.8	16	32.2	38.1	28 49.7	35.2
Sept. 3	27.4	42.5	22.1	31.9	26	14 46.6	37.7	29 10.3	35.2
13	13 6.9	42.6	26 6.9	31.9	Feb. 5	15 5.6	37.4	29 32.1	35.3
23	12 44.1	42.7	25 53.1	32.0	15	15 28.7	37.1	29 54.7	35.3
Oct. 3	12 20.2	42 7	41.4	32.0	25	15 55.2	36.8	♓ 0 17.5	35.4
13	11 55.9	42.6	32.2	31.9	Mar. 6	16 24.7	36.6	0 40.0	35.6
23	11 32.5	42.5	25.9	31.9	16	16 56.5	36.4	1 1.6	35.8
Nov. 2	11 10.9	42.3	22.7	31.8	26	17 29.7	36.3	21.9	36.0
12	10 52.1	42.0	7 St. 25 23.0	31.7	Apr. 5	18 3.9	36.2	40.5	36.2
22	36.8	41.7	26.7	31.6	15	18 38.2	36.2	1 56.9	36.4
Dec. 2	25.7	41.4	33.7	31.6	25	19 11.9	36.2	2 10.8	36.7
12	19.5	41.0	44.0	31.5	May 5	19 44.5	36.2	21.9	37.0
22	19 St. 10 18.3	40.6	25 57.3	31.5	15	20 15.3	36.3	29.9	37.3
'47, J. 1	22.3	40.2	26 13.3	31.4	25	20 43.6	36.4	3 St. 34.8	37.6
11	31.4	39 8	26 31.6	31.4	June 4	21 8.9	36.6	2 36.4	37.9
21	10 45.4	39 5	26 51.8	31.4	14	21 30.7	36.8	34.7	38.3
31	11 4.0	39.1	27 13.4	31.5	24	21 48.5	37.0	29.9	38.6
Feb. 10	11 26.8	38.8	27 35.8	31.5	July 4	22 2.1	37.3	22.2	38.8
20	11 53.1	38.5	27 58.6	31.6	14	11.2	37.5	2 11.8	39.1
Mar. 2	12 22.4	38.3	28 21.2	31.8	24	28 St. 14.9	37.8	1 59.2	39.3
12	12 54.0	38.1	28 43.1	31.9	Aug. 3	14.2	38.1	44.8	39.6
22	13 27.1	38.0	29 3.8	32.1	13	22 8.5	38.3	29.2	39.7
Apr. 1	14 1.2	37.9	22.8	32.3	23	21 58.3	38.5	1 12.9	39.8
11	14 35.4	37.9	39.8	32.5	Sept. 2	43.9	38.7	0 56.5	39.9
21	15 9.3	37.9	29 54.4	32 8	12	25.8	38.9	40.7	40.0
May 1	15 41.9	37.9	♓ 0 6.2	33.1	22	21 4.7	39.0	26.1	40.0
11	16 12.7	38.0	15.0	33.4	Oct. 2	20 41.7	39.0	13.3	40.0
21	16 41.2	38.2	20.7	33.7	12	20 17.5	39.0	♒ 0 2.7	39.9
31	17 6.8	38.4	23.1	33.9	22	19 53.1	38.9	29 54.9	39.8
Jun. 10	17 28 7	38.6	2 St. 22.2	34.2	Nov. 1	19 29.8	38.7	29 50.1	39.7

Uranus.			Neptune.			Uranus.			Neptune.		
Date.	Long.	Lat.	Long.		Lat.	Date.	Long.	Lat.	Long.		Lat.
1848.	♈	° s.	♒		° s.	1850.	♈	° s.	♓		° s.
	° ′	′	° ′		′		° ′	′	° ′		′
Nov. 1	19 29 8	38.7	29	50.1	39.7	Mar 26	25 3.3	32.5	5	38.4	43.3
11	19 8 4	38.5	St.	48.7	39.6	Apr. 5	25 36.9	32.4	5	57.9	43.5
21	18 49.9	38.3		50.6	39.5	15	26 11.1	32.3	6	15.4	43.8
Dec. 1	35.2	38.0	29	56.0	39 4	25	26 45.5	32.2		30.6	44.1
11	24.8	37.6	♓ 0	4.7	39.2	May 5	27 19.2	32.2		43.1	44.4
21		19.3	37.3		16.6	39.1	15	27 51.7	32.3		52.7	44.7
31	27 St. 18	18.9	36.9		31.3	39.1	25	28 22.2	32.3	6	59.2	45.1
'49, J. 10		23.7	36.5	0	48.6	39.0	June 4	28 50.3	32.5	7	2.5	45.4
20		33 6	36.2	1	7.9	39.0	14	29 15.4	32 6	8 St. 7	2 4	45.8
30	18	48.4	35.8	1	28 9	39.0	24	29 36.8	32.8	6	59.2	46.1
Feb. 9	19	7.2	35.5	1	50.9	39.0	July 4	29 54.2	33.0		53.0	46.5
19	19	31.1	35.2	2	13.6	39.1	14	♉ 0 7.3	33.2		43.9	46.8
Mar. 1	19	58.0	34.9	2	36.4	39.2	24	15.6	33.4		32.4	47.0
11	20	27.7	34.7	2	58.6	39.4	Aug. 3	19.1	33.6		18.8	47.3
21	20	59.6	34.6	3	20.0	39.5	13	5 St. 17.7	33.8	6	3.7	47.5
31	21	33.0	34.4	3	39.9	39.8	23	11.5	34.0	5	47.6	47.6
Ap. 10	22	7.1	34.3	3	58.0	40.0	Sept. 2	0 0.6	34.2	5	31.1	47.7
20	22	41.5	34.3	4	13.8	40.3	12	♈ 29 45.6	34.3	5	14.9	47.8
30	23	15.0	34.3		27.0	40.6	22	29 27.0	34.4	4	59 6	47.8
My. 10	23	47.7	34.3		37.4	40.9	Oct. 2	29 5.5	34.5		45.8	47.8
20	24	18.4	34.4		44.6	41.2	12	28 42.1	34.5		34.1	47.7
30	24	46.6	34.5		48.7	41.5	22	28 17.6	34.5		24.8	47.6
June 9	25	11.7	34.7	6 St. 4	49.5	41.9	Nov. 1	27 53.2	34.4		18.5	47.5
19	25	33.4	34.9		47.0	42.2	11	27 30.0	34.2	4	15.3	47.3
29	25	51.0	35.1		41.5	42.5	21	27 8.8	34.0	15 St.	15.6	47.1
July 9	26	4.3	35.3		33.1	42.8	Dec. 1	26 50.7	33.8		19.3	47.0
19		12.9	35.6		22.1	43.1	11	36.5	33.5		26.4	46.8
29		16.7	35.8	4	9.0	43.3	21	26.8	33.1		36.8	46.6
Aug. 8	1 St.	15.6	36.0	3	54.2	43.5	31	22.0	32.8	4	50.2	46.5
18	26	9.6	36.3		38.4	43.7	'51, J. 10	5 St. 26 22.4	32.5	5	6.3	46.4
28	25	59.0	36.5		21.9	43.8	20	28 0	32.1	5	24.6	46.3
Sept. 7		44.3	36.6	3	5.6	43.9	30	38.7	31.8	5	44.9	46.3
17		25.9	36.8	2	50.1	43.9	Feb. 9	26 54.3	31.5	6	6.4	46.3
27	25	4.7	36.8		35.9	43.9	19	27 14.3	31.2	6	28.9	46.3
Oct. 7	24	41.5	36.9		23.5	43.9	Mar. 1	27 38.3	30 9	6	51.6	46.4
17	24	17.1	36.8		13.6	43.8	11	28 5.7	30.7	7	14.2	46.6
27	23	52.7	36.7	2	6.5	43.7	21	28 35.8	30.5	7	36.1	46.7
Nov. 6	23	29.4	36.6		2.6	43.5	31	29 8.0	30.3	7	56.8	46.9
16	23	8.2	36.4	13 St.	2.0	43.4	Ap. 10	29 41.7	30.2	8	15.8	47.2
26	22	49.9	36.1		4.8	43.3	20	♉ 0 16.0	30.1		32.8	47.5
Dec. 6		35.4	35.8	2	11.0	43.1	30	0 50.4	30.0		47.4	47.8
16		25.4	35.5		20.6	43.0	My. 10	1 24.1	30.0	8	59.2	48.1
26		20.2	35.1		33.2	42.9	20	1 56.5	30.0	9	8.0	48.5
'50, J. 5	1 St. 22	20.1	34.8	2	48.7	42.8	30	2 27.0	30.1		13.7	48.9
15		25.4	34.4	3	6.5	42.7	June 9	2 55.0	30.2		16.2	49.2
25		35.7	34.1	3	26.3	42.7	19	3 19.4	30.3	11 St.	15.4	49.6
Feb. 4	22	50.9	33.7	3	47.6	42.7	29	3 41.2	30.5		11.4	50.0
14	23	10.6	33.4	4	9.8	42.7	July 9	3 58.5	30.6	9	4.4	50.3
24	23	34.3	33.1	4	32.6	42.8	19	4 11.3	30.8	8	54.7	50.6
Mar. 6	24	1.4	32.9	4	55.2	42.9	29	4 19.3	31.0		42.6	50.9
16	24	31.3	32.7	5	17.3	43.1	Aug. 8	4 22.7	31.2		28.6	51.2

Uranus.			Neptune.		Uranus.			Neptune.	
Date.	Long.	Lat.	Long.	Lat.	Date.	Long.	Lat.	Long.	Lat.
1851.	♉	0° s	♓	0° s.	1852.	♉	0° s.	♓	0° s.
	° ′	′	° ′	′		° ′	′	° ′	′
Aug. 8	4 22.7	31.2	8 28.6	51.2	Dec. 30	4 33.1	28.0	9 10.3	53.7
18 (10 St.)	20.9	31.4	8 13.2	51.4	'53, J. 9	29.0	27.7	25.1	53.6
28	14.3	31.6	7 56.9	51.5	19 (12 St.)	30.1	27.4	42.5	53.5
Sept. 7	4 3.2	31.7	40.5	51.6	29	36.5	27.0	10 1.8	53.4
17	3 47.9	31.9	24.5	51.6	Feb 8	4 48.0	26.7	10 22.8	53.3
27	3 29.0	32.0	7 9.4	51.6	18	5 4.3	26.5	10 44 9	53.3
Oct. 7	3 7.3	32.0	6 56.1	51.6	28	5 25.0	26.2	11 7.6	53.4
17	2 43 7	32.0	44.9	51.5	Mar 10	5 49.6	26.0	11 30.3	53.5
27	2 19.2	31.9	36.3	51.3	20	6 17.5	25.7	11 52.6	53.7
Nov. 6	1 54.7	31.8	30.8	51.1	30	6 48.1	25.5	12 13.9	53.9
16	1 31.5	31.7	6 28.5 (18 St.)	51.0	Apr. 9	7 20.6	25.4	12 33.8	54.1
26	1 10.5	31.5	29.6	50.8	19	7 54.5	25.3	12 51.9	54.4
Dec. 6	0 52.6	31.2	34.2	50.6	29	8 29.0	25.2	13 7.7	54.7
16	38.7	30 9	42.2	50.4	May 9	9 3.5	25.1	21.0	55.1
26	29.3	30.6	6 53.4	50.2	19	9 37.3	25.1	31.4	55.5
'52, J. 5	24.8	30.3	7 7.5	50.1	29	10 9.6	25.1	38.7	55.9
15 (9 St.)	0 25.6	30.0	7 24.2	50.0	June 8	10 40.1	25.2	42.8 (15 St.)	56.3
25	31.7	29.7	7 43.1	49.9	18	11 7.9	25.2	13 43.7	56.7
Feb. 4	42.8	29 3	8 3.7	49.8	28	11 32.5	25.3	41.3	57.1
14	0 58.7	29 0	8 25.5	49.9	July 8	11 53.5	25.4	35.8	57.5
24	1 19 1	28.8	8 48.1	49.9	18	12 10.4	25.5	27.4	57.8
Mar. 5	1 43 3	28.5	9 10.9	50.0	28	22.8	25.7	16 5	58.2
15	2 11.0	28.3	9 33.3	50.1	Aug. 7	30.5	25.8	13 3.4	58.5
25	2 41.4	28.1	9 54.9	50.3	17 (St.)	33.2	26.0	12 48.6	58.7
Apr. 4	3 13.7	27.9	10 15.3	50.6	27	12 31.0	26.1	12 32.7	58.9
14	3 47.5	27.8	10 33.8	50.8	Sept. 6	12 23.9	26.2	12 16.3	59.0
24	4 21.9	27.7	10 50.2	51.1	16	12 12.2	26.3	11 59.9	59.0
May 4	4 56.3	27.7	11 4.2	51.5	26	11 56.3	26.4	44.3	59.0
14	5 30.1	27.6	15.3	51.8	Oct. 6	11 37.0	26.5	30.0	59.0
24	6 2.5	27.7	23.4	52.2	16	11 14.8	26.5	17.7	58.8
June 3	6 32.9	27.7	28.3	52.6	26	10 50.9	26.5	7.8	58.7
13	7 0.8	27.8 (St.)	29.9	53.0	Nov. 5	10 26.1	26.4	11 0.7	58.5
23	7 25.6	27.9	11 28.3	53.4	15	10 1.7	26.3	10 56.7	58.3
July 3	7 46.7	28.0	23.6	53.8	25	9 38.6	26.1 (22 St.)	10 56.2	58.0
13	8 3.8	28.2	15.9	54.1	Dec. 5	9 17.8	25.9	10 59.1	57.8
23	16.4	28.3	11 5.5	54.4	15	9 0.4	25.7	11 5.4	57.6
Aug. 2	24.2	28.5	10 52.9	54.7	25	8 47.0	25.4	15.0	57.3
12	8 27.2	28.7	38.5	55.0	'54, J. 4	38.2	25.2	27.7	57.1
22 (13 St.)	25.3	28.8	22.9	55.1	14	34.5 (15 St.)	24.9	11 43 2	57.0
Sept. 1	18.4	29.0	10 6.5	55.3	24	36 1	24.6	12 1.1	56.9
11	8 7.0	29.1	9 50.1	55.3	Feb. 3	42.8	24.3	12 20.9	56.8
21	7 51.4	29.2	34.2	55.4	13	8 54.7	24.0	12 42.2	56.7
Oct. 1	7 32.3	29.3	19.6	55.3	23	9 11.4	23.7	13 4.5	56.7
11	7 10.4	29.3	9 6.7	55.2	Mar. 5	9 32.4	23.5	13 27.3	56.8
21	6 46.6	29.3	8 56.1	55.1	15	9 57.3	23.3	13 49.9	56.9
31	6 21.9	29.2	48.3	54.9	25	10 25.4	23.1	14 12.0	57.1
Nov 10	5 57.5	29.1	43.5 (19 St.)	54.8	Apr. 4	10 56.2	22.9	14 33 0	57.3
20	5 34.3	29.0	42.1	54.5	14	11 28.9	22.7	14 52.5	57.6
30	5 13.4	28.8	8 44.1	54.3	24	12 2.9	22.6	15 10.1	57.9
Dec. 10	4 55.8	28.5	49.6	54.1	May 4	12 37.5	22.5	25.3	58.2
20	4 42.1	28.3	58.4	53.9	14	13 12.1	22.5	37.9	58.6

Uranus.			Neptune.		Uranus.			Neptune.	
Date.	Long.	Lat.	Long.	Lat.	Date.	Long.	Lat.	Long.	Lat.
1854.	♉	0° s.	♓	0° s.	1855.	♉	0° s.	♓	1° s.
	° ′	′	° ′	′		° ′	′	° ′	′
My.14	13 12.1	22.5	15 37.9	58.6	Oct. 6	20 10.9	20.4	16 5.3	6.0
24	13 45.8	22.4	47.5	59.0	16	19 51.0	20.4	15 51.9	5.9
June 3	14 18.2	22.4	54.1	59.5	26	19 28.5	20.3	40.7	5.7
13	14 48.6	22.5	57.4	59.9	Nov. 5	19 4.2	20.3	32.2	5.5
23	15 16.3	22.5	18 St. 57.5	1 0.3	15	18 39.3	20 2	26.6	5.3
July 3	15 40.9	22.6	15 54.3	0.7	25	18 14.8	20.1	27 St. 15 24.4	5.0
13	16 1.8	22.7	48.1	1.1	Dec. 5	17 51.8	19.9	25.6	4.7
23	18.5	22.8	39.1	1.5	15	31.4	19 8	30.2	4.4
Aug. 2	30.8	22.9	27.5	1.8	25	14.3	19.6	38 2	4.2
12	38.2	23.0	15 14.0	2.1	'56, J. 4	17 1.5	19.3	15 49.5	3 9
22	St. 40.7	23.1	14 58.9	2.3	14	16 53.3	19.1	16 3.7	3.7
Sept. 1	16 38.2	23.2	42.8	2.5	24	16 50.4	18.9	16 20.4	3.5
11	30.9	23.3	26.3	2.6	Feb. 3	25 St. 16 52.6	18.6	16 39 3	3.4
21	18.9	23.4	14 10.0	2.6	13	17 0.2	18.4	17 0.0	3.3
Oct. 1	16 2.8	23.5	13 54.7	2.6	23	12.7	18.1	17 21.9	3.3
11	15 43.2	23.5	40.8	2.5	Mar. 4	30.1	17.9	17 44.4	3.3
21	15 20.8	23.5	29.0	2.3	14	17 51.7	17.7	18 7.2	3.4
31	14 56.7	23.4	19.8	2.2	24	18 17.1	17.5	18 29.6	3.5
Nov. 10	14 31.9	23.4	13.5	1.9	Apr. 3	18 45.7	17.3	18 51.2	3.7
20	14 7.4	23.2	13 10.4	1.7	13	19 16.9	17.2	19 11.6	4.0
30	13 44.3	23.1	25 St. 10.7	1.4	23	19 50.0	17.0	19 30.1	4.3
Dec. 10	13 23.8	22.9	14.4	1.2	May 3	20 24.2	16.9	19 46.6	4 7
20	13 6.5	22.7	21.6	0.9	13	20 59.1	16.8	20 0.5	5.1
30	12 53.4	22.4	32.1	0.7	23	21 33 8	16.8	11.7	5.5
'55, J. 9	45.0	22.2	13 45.5	0.5	June 2	22 7.6	16.7	19 8	5.9
19	41.6	21.9	14 1.6	0.3	12	22 40.1	16.7	24.8	6.4
29	20 St. 43.5	21.7	14 20.1	0.2	22	23 10.4	16.7	20 26.6	6.8
Feb. 8	12 50.7	21.4	14 40.3	0.1	July 2	23 38.0	16.7	23 St. 25 0	7.3
18	13 2.9	21.1	15 1.9	0.0	12	24 2.5	16.7	20.4	7.7
28	13 19.9	20.9	15 24.4	0.1	22	23.1	16.8	12.7	8.1
Mar. 10	13 41.2	20.6	15 47.1	0.1	Aug. 1	39.6	16.8	20 2.4	8.5
20	14 6.4	20.4	16 9.7	0.3	11	51.6	16.9	19 49 9	8.8
30	14 34.8	20.2	16 31.6	0.5	21	24 58.6	16.9	35.4	9.1
Apr. 9	15 5.7	20.1	16 52.3	0.7	31	30 St. 25 0.7	17.0	19.7	9.3
19	15 38.7	19.9	17 11.3	1.0	Sep. 10	24 57.7	17.0	19 3.8	9.4
29	16 12.8	19.8	28.3	1.3	20	49.9	17.1	18 46.9	9.5
May 9	16 47.5	19.7	42.9	1.7	30	37.4	17.1	30.9	9.5
19	17 22.1	19.7	17 54.8	2.1	Oct. 10	20.8	17.1	16.2	9.4
29	17 55.9	19.6	18 3.7	2.5	20	24 0.7	17.1	18 3.3	9.2
June 8	18 28.3	19.6	9.5	3.0	30	23 37.9	17.1	17 52.7	9.0
18	18 58.7	19.6	12.0	3.4	Nov. 9	23 13.6	17.0	44.9	8.8
28	19 26.4	19.7	21 St. 11.3	3 8	19	22 48.6	16.9	40.1	8.5
July 8	19 50.9	19.7	7.4	4.3	29	22 24.0	16.8	17 38.8	8.2
18	20 11.6	19.8	18 0.4	4.7	Dec. 9	22 1.1	16.7	30 St. 40.8	7.9
28	28.2	19.8	17 50.8	5.0	19	21 40.8	16.5	46.3	7.6
Aug. 7	40.3	19.9	38.7	5.4	29	23 9	16.3	17 55.2	7.3
17	47.6	20.0	24.7	5.6	'57, J. 8	11.3	16.1	18 7.2	7.1
27	St. 49.8	20.1	17 9.3	5.9	18	3.5	15 9	22.0	6 8
Sept. 6	20 47.1	20.2	16 53.0	6.0	28	29 St. 21 0.8	15 7	39.4	6.6
16	39.5	20.3	36.5	6.1	Feb 7	3.4	15 4	18 58.8	6.5
26	27.2	20.3	20.4	6.1	17	11.3	15.2	19 19.8	6.4

Uranus.			Neptune.		Uranus.			Neptune.	
Date.	Long.	Lat.	Long.	Lat.	Date.	Long.	Lat.	Long.	Lat.
1857.	♉	0° s.	♓	1° s.	1858.	♊	0° s.	♓	1° s.
	° ′	′	° ′	′		° ′	′	° ′	′
Feb. 17	21 11.3	15.2	19 19.8	6.4	July 12	2 6.4	10.4	24 52.1	13.9
27	21 24.2	15.0	19 41.9	6.4	22	2 30.8	10.4	46.0	14.4
Mar. 9	21 41.9	14.8	20 4.6	6.4	Aug. 1	2 51.3	10.4	37.0	14.8
19	22 3.8	14.6	20 27.3	6.5	11	3 7.6	10.4	25.5	15.1
29	22 29.5	14.4	20 49.5	6.7	21	19.3	10.4	24 11.9	15.4
Apr. 8	22 58.3	14.3	21 10.9	6.9	31	26.0	10.4	23 56.7	15.7
18	23 29.7	14.1	21 30.8	7.2	Sep. 10	8 St. 3 27.7	10.4	40.6	15.8
28	24 2.9	14.0	21 48.9	7.5	20	24.3	10.4	24.0	15.9
May 8	24 37.3	13.9	22 4.7	7.9	30	15.9	10.4	23 7.7	15.9
18	25 12.3	13.8	18.0	8.3	Oct. 10	3 2.9	10.3	22 52.3	15.9
28	25 47.0	13.7	28.5	8.8	20	2 45.8	10 3	38.3	15.7
June 7	26 21.0	13.7	35.9	9.2	30	2 25.3	10.3	26.5	15.5
17	26 53.4	13.6	40.1	9.7	Nov. 9	2 2.2	10 2	17.2	15.3
27	27 23.7	13.6	25 St. 22 40.9	10.2	19	1 37.5	10.1	22 10.8	15.0
July 7	27 51.4	13 6	38.7	10.6	29	1 12.3	10 c	7.8	14.6
17	28 15.8	13.6	33.3	11.1	Dec. 9	0 47.8	9.9	3 St. 8.1	14.3
27	28 36.4	13.6	24.9	11.5	19	0 24.9	9.8	11.9	13.9
Aug. 6	28 52.8	13.6	14.0	11.9	29	0 4.9	9 6	22 19.1	13.6
16	29 4.6	13.7	22 0.9	12.2	'59, J. 8	♌ 29 48.4	9.5	29.6	13.3
26	11.4	13.7	21 46.1	12.4	18	36.3	9.3	43.1	13.0
Sept. 5	4 St. 13.3	13.7	21 30 2	12.6	28	29.0	9.1	22 59.2	12.8
15	10.1	13.8	21 13.7	12.7	Feb. 7	4 St. 29 26.9	9.0	23 17.7	12.6
25	29 2.0	13.8	20 57.3	12.8	17	30.2	8.8	23 37.9	12.4
Oct. 5	28 49.3	13 8	41.6	12.7	27	38.7	8.6	23 59.5	12.4
15	28 32.4	13.8	27.2	12.6	Mar. 9	29 52.2	8.5	24 22.0	12.4
25	28 12.1	13.7	14.8	12.4	19	♊ 0 10.5	8.3	24 44.7	12.4
Nov. 4	27 49.2	13.7	20 4.9	12.2	29	0 32.9	8.2	25 7.2	12.6
14	27 24.6	13 6	19 57.8	11.9	Apr. 8	0 59.1	8.0	25 29.1	12.8
24	26 59.5	13.5	53.9	11.6	18	1 28.4	7.9	25 49.8	13.0
Dec. 4	26 35.0	13.4	1 St. 53.3	11.3	28	2 0.1	7.8	26 8.8	13.3
14	26 12.1	13.3	19 56.3	11.0	May 8	2 33.7	7.7	25.8	13.7
24	25 51.9	13.1	20 2.7	10.7	18	3 8.4	7.6	40.5	14.1
'58, J. 3	35.3	12.9	12.3	10.4	28	3 43.5	7.5	26 52.4	14.6
13	22.9	12.7	25.1	10.1	June 7	4 18.5	7.4	27 1.4	15.0
23	15.4	12.6	40.6	9.9	17	4 52.5	7.3	7.2	15.5
Feb. 2	St. 13 0	12.4	20 58.5	9.7	27	5 25.1	7.3	9.8	16.1
12	25 16.0	12.2	21 18.4	9.5	July 7	5 55.5	7.2	30 St. 9.1	16.6
22	24.2	12.0	21 39.7	9.5	17	6 23.1	7.2	27 5.2	17.0
Mar. 4	37.4	11.8	22 2.0	9.4	27	6 47.4	7.1	26 58.3	17.5
14	25 55.3	11.6	22 24.7	9.5	Aug. 6	7 7.9	7.1	48.7	17.9
24	26 17.6	11.4	22 47.3	9.6	16	24.1	7.0	36.6	18.3
Apr. 3	26 43.5	11.3	23 9.4	9.8	26	35.6	7.0	22.6	18.6
13	27 12.5	11.1	23 30.4	10.0	Sept. 5	42.2	7.0	26 7.1	18.8
23	27 44.1	11.0	23 49.9	10.3	15	13 St. 7 43.8	7.0	25 50.8	18.9
May 3	28 17.5	10.9	24 7.5	10.7	25	40.1	6.9	34.2	19 0
13	28 52.1	10.8	22.8	11.1	Oct. 5	31.5	6.9	18.0	19 0
23	29 27.1	10.7	35.4	11.5	15	18.3	6.8	25 2.9	18.9
June 2	♊ 0 1.9	10.6	24 45.1	12.0	25	7 0.9	6.8	24 49.4	18.7
12	0 35.9	10.5	51.7	12.4	Nov. 4	6 40.2	6.7	38.1	18.5
22	1 8.4	10.5	27 St. 55.1	12.9	14	6 16.9	6.6	29.5	18.2
July 2	1 38.8	10.5	55.2	13.4	24	5 52.1	6.5	24.0	17.9

Uranus.			Neptune.		Uranus.			Neptune.	
Date.	Long.	Lat.	Long.	Lat.	Date.	Long.	Lat.	Long.	Lat.
1859.	♊	0° s.	♓	1° s.	1861.	♊	0° s.	♈	1° s.
	° ′	′	° ′	′		° ′	′	° ′	′
Nov 24	5 52.1	6.5	24 24.0	17.9	Apr.17	9 35.0	1.4	0 8.0	18.4
Dec. 4	5 26.8	6.4	21.7	17.5	27	10 4.6	1.3	0 27.9	18.7
14	5 2.2	6.3	6 St. 22.9	17.1	May 7	10 36.7	1.2	0 46.0	19.0
24	4 39.5	6.2	27.6	16.8	17	11 10.6	1.1	1 1.9	19.5
'60, J. 3	4 19.5	6.1	35.7	16.4	27	11 45.6	1.0	15.2	19 9
13	4 3.2	5.9	24 47.0	16.1	June 6	12 21.0	0.9	25.7	20.4
23	3 51.3	5.8	25 1.2	15.8	16	12 56.1	0.8	33.1	20.9
Feb. 2	44.3	5.7	17.9	15.6	26	13 30.3	0.7	37.4	21.4
12	10 St. 42.4	5.5	36.9	15.4	July 6	14 3.0	0.6	5 St. 1 38 4	22.0
22	46.0	5.4	25 57.5	15.2	16	14 33.5	0.5	36.1	22.5
Mar. 3	3 54.8	5.2	26 19.4	15.2	26	15 1.2	0.4	30.7	23.0
13	4 8.6	5.1	26 41.9	15.2	Aug. 5	15 25.5	0 4	22.4	23.4
23	4 27.1	5.0	27 4.6	15.3	15	15 45.9	0.3	1 11.5	23.8
Apr. 2	4 49.9	4.8	27 27.1	15.4	25	16 1.9	0.2	0 58.4	24.2
12	5 16.2	4.7	27 48.6	15.6	Sept.4	13 3	0.1	43 5	24.5
22	5 45.7	4 6	28 8.9	15.9	14	19.6	0.0	27.5	24.6
May 2	6 17.7	4.5	27.5	16.2	24	22 St. 20.7	n.0.1	♓ 0 10.9	24 7
12	6 51.4	4.4	44.0	16.6	Oct. 4	16.7	0.2	29 54.4	24.8
22	7 26.2	4 3	28 58.0	17.1	14	16 7.7	0.3	38.6	24.7
June 1	8 1.5	4.2	29 9.2	17.5	24	15 54.0	0.4	24.2	24.5
11	8 36.5	4.1	17.4	18.0	Nov. 3	15 36.2	0.5	11.7	24.3
21	9 10.7	4.0	22.4	18.5	13	15 15.0	0 6	29 1.7	24.0
July 1	9 43.3	4.0	24 2	19.1	23	14 51.3	0.7	28 54.6	23 7
11	10 13.7	3.9	2 St. 29 22.8	19.6	Dec. 3	14 26.2	0 8	50.7	23.3
21	10 41.3	3.8	18.1	20.1	13	14 0 8	0.9	10 St. 50.2	22 9
31	11 5.6	3.8	10.5	20.5	23	13 36.2	1.0	53.1	22.5
Aug 10	26.1	3 7	29 0.2	20.9	'62, J. 2	13 13.5	1.1	28 59.5	22.1
20	42.2	3.6	28 47.6	21.3	12	12 53 7	1.2	29 9.2	21.7
30	11 53.6	3.6	33.1	21.6	22	37.7	1.3	22.0	21.3
Sept.9	17 St 12 0.1	3.5	17.4	21.8	Feb. 1	26.2	1.4	37.6	21.0
19	12 1.4	3.4	28 0.9	21.9	11	19.7	1.5	29 55 5	20.8
29	11 57.6	3.4	27 44.3	21.9	21	18 St. 12 18 4	1.5	♈ 0 15.3	20 6
Oct. 9	48.8	3.3	28.3	21.9	Mar. 3	22.5	1.6	0 36.6	20.5
19	35.3	3.2	13.5	21.8	13	31.8	1.7	0 58.9	20.5
29	11 17.7	3.1	27 0.5	21.6	23	12 46.2	1.8	1 21.6	20 5
Nov.8	10 56.8	3 1	26 49.9	21.3	Apr. 2	13 5.2	1.9	1 44 2	20.6
18	10 33.3	3.0	42.0	21.0	12	13 28.4	1 9	2 6.2	20.8
28	10 8.3	2.9	37.3	20.6	22	13 55.2	2.0	2 27.2	21.0
Dec. 8	9 43.0	2.8	St. 35.9	20.3	May 2	14 25.1	2.1	2 46.7	21.4
18	9 18.4	2.7	38.0	19.9	12	14 57.3	2.2	3 4.3	21.7
28	8 55 6	2.6	26 43.5	19 5	22	15 31.4	2.3	19.6	22.2
'61, J. 7	35.8	2.5	26 52.4	19.1	June 1	16 6.5	2.4	32.2	22.6
17	19.6	2.3	27 4.4	18.8	11	16 42.0	2.4	42.0	23.1
27	7.9	2.2	19.3	18.5	21	17 17.3	2.5	3 48.6	23.7
Feb. 6	8 1.2	2.1	36.7	18.2	July 1	17 51.6	2.6	52.1	24.2
16	14 St. 7 59.6	2.0	27 56.1	18.1	11	18 24.3	2.7	7 St. 52.3	24.8
26	8 3.5	1.9	28 17.1	17.9	21	18 54.8	2.8	49.2	25.3
Mar. 8	12.5	1.8	28 39 1	17.9	31	19 22.6	2.9	3 43.1	25.8
18	26.6	1.7	29 1.8	17.9	Aug 10	19 46.9	3 1	34.1	26.2
28	8 45.4	1.6	24.5	18.0	20	20 7.3	3.2	22.6	26.6
Apr. 7	9 8.3	1.5	46.7	18.2	30	20 23 3	3.3	9.0	27.0

Uranus.			Neptune.		Uranus.			Neptune.	
Date.	Long.	Lat.	Long.	Lat.	Date.	Long.	Lat.	Long.	Lat.
1862.	♊	0° n.	♍	1° s.	1864.	♊	0° n.	♍	1° s.
	° ′	′	° ′	′		° ′	′	° ′	′
Aug 30	20 23 3	3·3	3 9·0	27·0	Jan. 22	21 34·7	8 5	3 43·6	26·4
Sept. 9	34·5	3·4	2 53 8	27 2	Feb. 1	19.0	8.6	3 57·9	26.1
19	40.7	3·5	37·5	27 4	11	7 9	8 6	4 14.6	25.8
29 26 St.	20 41·7	3·7	20.9	27.4	21	1.8	8.6	4 33.6	25.6
Oct. 9	37·5	3·8	2 4·5	27 4	Mar. 2 28 St.	21 1.0	8.7	4 54.2	25.4
19	28.3	3·9	1 49.0	27·3	12	5·5	8 7	5 16.0	25·3
29	20 14·3	4.1	35.0	27.1	22	15·3	8.7	5 38 5	25·3
Nov. 8	19 56.3	4.2	23.1	26.9	Apr. 1	30.2	8 7	6 1.3	25.4
18	19 34·9	4.3	13.8	26.6	11	21 49.6	8 7	6 23.6	25·5
28	19 11.1	4.4	1 7.4	26.2	21	22 13 2	8 8	6 45 2	25·7
Dec. 8	18 45.8	4·5	12 St. 4·3	25.8	May 1	22 40 4	8 8	7 5·5	26.0
18	18 20.3	4.6	4·7	25 4	11	23 10 7	8.8	24.1	26.4
28	17 55·7	4·7	8.5	24.9	21	23 43·3	8 9	40.6	26 8
'63, J. 7	17 33.0	4.8	1 15.8	24.5	31	24 17.6	9 0	7 54.6	27.2
17	17 13·4	4·9	26.3	24.1	Jun. 10	24 53 0	9.0	8 5 8	27·7
27	16 57·5	4·9	39.8	23.8	20	25 28.8	9.1	14.1	28.3
Feb. 6	46.2	5.0	1 56.0	23.5	30	26 4 3	9.2	19.2	28.8
16	39.9	5.1	2 14.4	23.2	July 10	26 38.8	9.3	8 21.1	29.4
26 23 St.	38.9	5.1	2 34·7	23.1	20	27 11.7	9.5	12 St. 19.7	30.0
Mar. 8	43.2	5.2	2 56.3	23.0	30	27 42.4	9.6	15.1	30.5
18	16 52.4	5.2	3 18.7	22.9	Aug. 9	28 10.2	9.7	8 7.5	31.0
28	17 7.3	5.2	3 41.4	23.0	19	28 34.6	9.9	7 57.2	31.4
Apr. 7	17 26.6	5.3	4 3 9	23.1	29	28 55 0	10.1	44.6	31.8
17	17 50.0	5.4	4 25.7	23 3	Sept. 8	29 10 9	10.2	30.1	32.1
27	18 17.0	5.4	4 46.4	23 6	18	22.0	10 4	7 14.3	32.3
May 7	18 47.0	5.5	5 5.4	23.9	28	28.0	10.6	6 57.7	32.4
17	19 19.5	5.5	22.5	24.3	Oct. 8 6 St.	29 28.7	10.8	41.1	32.4
27	19 53.7	5 6	37.1	24.8	18	24.2	11.0	25.0	32.4
June 6	20 28.9	5.7	49.1	25.3	28	14.5	11.2	6 10.2	32.2
16	21 4.6	5.8	5 58.1	25.8	Nov. 7	29 0.2	11.4	5 57.1	31.9
26	21 39.9	5.9	6 4 0	26.3	17	28 41.8	11.5	46.5	31.6
July 6	22 14.4	6 0	9 St. 6.6	26.9	27	28 20.0	11.7	38.6	31.2
16	22 47.2	6.1	6.0	27.4	Dec. 7	27 55.9	11.8	33.9	30.8
26	23 17.8	6.2	6 2.2	28.0	17	27 30.4	11.9	St. 5 32.5	30.4
Aug. 5	23 45.5	6.4	5 55.3	28.5	27	27 4.7	12 0	34.6	29.9
15	24 9.9	6.5	45.7	28.9	'65, J. 6	26 40.0	12.1	40 2	29.4
25	30.3	6.6	33.6	29.3	16	26 17.4	12.1	5 49.1	29.0
Sept. 4	46.2	6.8	19.5	29.6	26	25 58.0	12.2	6 1.2	28.6
14	24 57.4	6 9	5 4 0	29.8	Feb. 5	42.4	12 2	16.1	28 3
24	1 St. 25 3.5	7.1	4 47.6	30.0	15	31.4	12.2	33 5	28 0
Oct. 4	25 4.3	7.3	4 30.9	30 0	25	4 St. 25.5	12.2	6 52 9	27.7
14	25 0.0	7.4	4 14.7	30.0	Mar. 7	25 24.9	12.2	7 13.9	27.6
24	24 50.5	7.6	3 59.5	29.8	17	29.7	12.1	7 35.9	27.5
Nov. 3	24 36.4	7.7	45.9	29.6	27	39 7	12.1	7 58.5	27.5
13	24 18.2	7.9	34.6	29.3	Apr. 6	25 54.7	12.1	8 21.2	27.6
23	23 56.6	8.0	26.0	29.0	16	26 14.3	12.1	8 43.4	27.7
Dec. 3	23 32.6	8.1	3 20.5	28.6	26	26 38.2	12.1	9 4.7	28.0
13	23 7.2	8.2	18.2	28.1	May 6	27 5.5	12.1	24.6	28.3
23	22 41.6	8.3	15 St. 19.5	27.7	16	27 35.9	12.2	42.7	28.7
'64, J. 2	22 16.9	8.4	24.2	27.3	26	28 8.7	12.2	9 58.6	29.1
12	21 54.3	8.5	32.3	26.8	June 5	28 43.2	12.3	10 12.0	29.6

Uranus.			Neptune.		Uranus.			Neptune.	
Date.	Long.	Lat.	Long.	Lat.	Date.	Long.	Lat.	Long.	Lat.
1865.	♊	0° n.	♍	1° s.	1866.	♑	0° n.	♍	1° s.
	° ′	′	° ′	′		° ′	′	° ′	′
June 5	28 43.2	12.3	10 12.0	29.6	Oct.28	8 18.1	18.0	10 46.4	36 7
15	29 18.7	12.3	22.5	30.1	Nov. 7	8 8.2	18.2	32.4	36.5
25	29 54.7	12.4	30.1	30.7	17	7 53.5	18.5	20.5	36.2
July 5	♑ 0 30.3	12.5	34.4	31.2	27	7 34.7	18.7	11.2	35.8
15	1 4.9	12.6	14 St. 10 35.4	31.8	Dec. 7	7 12.6	18.9	10 4.8	35.3
25	1 38.0	12.8	33.2	32.4	17	6 48.2	19.0	1.7	34.9
Aug.4	2 8.7	12.9	27.9	32.9	27	6 22.5	19.1	21 St. 2.2	34.4
14	2 36.6	13.1	19.6	33.4	'67, J. 6	5 56.7	19.2	6.0	33.9
24	3 1.0	13.3	10 8.7	33.8	16	5 32.0	19.2	10 13.4	33.4
Sept.3	21.4	13.5	9 55.6	34.2	26	5 9.5	19.3	23.9	33.0
13	37.4	13.7	40.7	34.5	Feb. 5	4 50.2	19.2	37.5	32.6
23	48.4	13.9	24.6	34.6	15	34.8	29.2	10 53.7	32.2
Oct. 3	54.3	14.1	9 8.0	34.7	25	24.2	19.1	11 12.1	31.9
13 10 St.	3 55.0	14.3	8 51.4	34.7	Mar. 7	18.6	19.1	11 32.3	31.7
23	50.2	14.5	35.6	34.6	17 12 St.	4 18.4	19.0	11 53.9	31.6
Nov. 2	40.4	14.8	21.1	34.4	27	23.5	18.9	12 16.3	31.5
12	25.9	14.9	8 8.6	34.1	Apr. 6	33.9	18.8	12 39.0	31.6
22	3 7.3	15.1	7 58.6	33.8	16	4 49.3	18.8	13 1.5	31.7
Dec. 2	2 45.4	15.3	51.5	33.4	26	5 9.3	18.7	13 23.3	31.9
12	2 21.1	15.4	19 St. 47.6	32.9	May 6	5 33.5	18.7	13 43.9	32.1
22	1 55.5	15.6	47.1	32.4	16	6 1.1	18.6	14 3.0	32.5
'66, J. 1	1 29.7	15.6	50.1	32.0	26	6 31.9	18.6	20.1	32.9
11	1 5.0	15.7	7 56.6	31.5	June 5	7 5.0	18.6	34.8	33.4
21	0 42.5	15.7	8 6.3	31.1	15	7 39.7	18.7	46.8	33.9
31	0 23.1	15.7	19.2	30.7	25	8 15 5	18.7	14 55.9	34.4
Feb.10	♊ 0 7.6	15.7	34.7	30.3	July 5	8 51.8	18.8	15 1.9	35.0
20	29 56.8	15.7	8 52.7	30.0	15	9 27.6	18.9	4.6	35.6
Mar.2	51.1	15.7	9 12.5	29.8	25	10 2.5	19.0	19 St. 4.1	36.2
12 8 St.	50.6	15.6	9 33.8	29.6	Aug. 4	10 35.8	19.2	15 0.3	36 8
22	29 55.6	15.6	9 56.0	29.6	14	11 6.8	19.4	14 53.5	37.3
Apr. 1	♑ 0 5.9	15.5	10 18.7	29.6	24	11 34.8	19.6	43.9	37.8
11	0 21.1	15.5	10 41.3	29.7	Sept. 3	11 59.3	19.8	31.8	38.2
21	0 40.9	15.4	11 3.3	29.9	13	12 19.8	20.1	17.8	38.5
May 1	1 4.9	15.4	11 24.3	30.1	23	35.8	20.3	14 2.2	38.7
11	1 32.4	15.4	11 43.8	30.5	Oct. 3	46.8	20.6	13 45.8	38.9
21	2 3.0	15.4	12 1.4	30.8	13	52.5	20.9	13 29.0	38.9
31	2 35.9	15.4	16.7	31.3	23 18 St.	12 52.9	21.1	13 12.8	38.8
Jun.10	3 10.5	15.5	29.4	31.8	Nov. 2	48.0	21.4	12 57.5	38.6
20	3 46.2	15.6	39.2	32.3	12	37.9	21.7	44.0	38.4
30	4 22.3	15.6	12 46.0	32.9	22	23.1	21.9	32.7	38.0
July 10	4 58.0	15.7	49.5	33.5	Dec. 2	12 4.2	22.1	24.0	37.6
20	5 32.8	15.9	16 St. 49.8	34.1	12	11 42.0	22.3	18.5	37.2
30	6 5.9	16.0	46.8	34.6	22	11 17.4	22.5	12 16.3	36.7
Aug.9	6 36.8	16.2	12 40.7	35.2	'68, J. 1	10 51.6	22.6	23 St. 17.6	36.2
19	7 4.8	16.4	31.8	35.6	11	10 25.8	22.7	22.3	35.7
29	7 29.2	16.6	20.3	36.1	21	10 1.1	22 7	30.5	35.2
Sept.8	7 49.7	16.8	12 6.6	36.4	31	9 38.6	22.7	41.8	34.7
18	8 5.6	17.0	11 51.4	36.7	Feb.10	9 19.4	22.7	12 56.1	34.3
28	16.6	17.3	35.1	36.8	20	9 4.2	22.6	13 12.9	34.0
Oct. 8	22.4	17.5	18.4	36.9	Mar. 1	8 53.6	22.5	31.8	33.7
18 14 St.	22.9	17.8	2.0	36 8	11	8 48.2	22.4	52.4	33.5

Uranus.			Neptune.		Uranus.			Neptune.	
Date.	Long.	Lat.	Long.	Lat.	Date.	Long.	Lat.	Long.	Lat.
1868.	♑	0° n.	♈	1° s.	1869.	♑	0° n.	♈	1° s.
	° ′	′	° ′	′		° ′	′	° ′	′
Mar 11	8 48.2	22.4	13 52.4	33.5	Aug. 3	19 7.7	25.1	19 32.6	40.0
16 St. 21	48.1	22.3	14 14.2	33.4	13	19 41.2	25.3	27.3	40.6
31	8 53.4	22.2	14 36.7	33.3	23	20 12.5	25.5	19.1	41.1
Apr 10	9 4.0	22.1	14 59.4	33.4	Sept. 2	20 40.7	25.7	19 8.2	41.5
20	9 19.5	22.0	15 21.8	33.5	12	21 5.4	26.0	18 55.1	41.9
30	9 39.7	21.9	15 43.3	33.7	22	26.0	26.3	40.2	42.2
May 10	10 3.9	21.8	16 3.7	34.0	Oct. 2	42.0	26.6	24.1	42.4
20	10 31.8	21.7	22.3	34.4	12	53.0	26.9	18 7.4	42.4
30	11 2.7	21.7	38.8	34.8	22	28 St. 58.7	27.2	17 50.8	42.4
June 9	11 35.9	21.7	16 52.9	35.3	Nov. 1	21 59.0	27.5	34.9	42.3
19	12 10.8	21.7	17 4.2	35.8	11	53.9	27.9	20.4	42 0
29	12 46.8	21.8	12.6	36.4	21	43.6	28.2	17 7.9	41.7
July 9	13 23.1	21.9	17.8	37.0	Dec. 1	28.5	28.4	16 57.9	41.3
19	13 59.1	22.0	21 St. 17 19.7	37.6	11	21 9.3	28.7	50.8	40.8
29	14 34.2	22.1	18 4	38.2	21	20 46.9	28.9	28 St. 46.9	40.3
Aug. 8	15 7.6	22.3	13 9	38.7	31	20 22.1	29.1	46.4	39.8
18	15 38.7	22.5	17 6.4	39.3	'70, J. 10	19 56.2	29.2	49.5	39.3
28	16 6.8	22.7	16 56.1	39.7	20	19 30.3	29.2	16 55.9	38.7
Sept. 7	16 31.4	22.9	43.5	40.1	30	19 5.6	29.2	17 5.7	38.2
17	16 52.0	23.2	29.0	40.4	Feb. 9	18 43.2	29.2	18.6	37.8
27	17 7.9	23.5	16 13.1	40.6	19	18 24.1	29.1	34.1	37.4
Oct. 7	18.9	23.8	15 56.5	40.7	Mar. 1	18 9.1	29.0	17 52.0	37.0
17	24.6	24.1	39.9	40.7	11	17 58.7	28.9	18 11.9	36.8
27	23 St. 25.0	24.4	23 8	40.6	21	53.6	28.7	18 33.1	36.6
Nov. 6	19.9	24.7	15 8 9	40.4	31	26 St. 53.7	28.5	18 55.3	36.5
16	17 9 7	25.0	14 55.8	40.1	Apr 10	17 59.3	28.3	19 17.9	36.5
26	16 54.8	25.3	45.1	39.7	20	18 10.1	28.2	19 40.5	36.6
Dec. 6	16 35.7	25.5	37.3	39.3	30	18 25.9	28.0	20 2.5	36.8
16	16 13.4	25.7	32.6	38.8	May 10	18 46.3	27.9	20 23.5	37 0
26	15 48 7	25.8	25 St. 14 31.2	38.3	20	19 10.8	27.7	20 43.0	37.4
'69, J. 5	15 22.8	25.9	33.4	37.8	30	19 38.9	27.6	21 0.7	37.8
15	14 57 0	26.0	39.0	37.3	June 9	20 10.0	27.6	16.1	38.2
25	14 32.3	26.0	14 48.0	36.8	19	20 43.5	27.5	28.8	38.7
Feb. 4	14 9.9	26.0	15 0.1	36.3	29	21 18.7	27.5	38 8	39.3
14	13 50.6	26 0	15.0	35.9	July 9	21 54.9	27.6	21 45.6	39.9
24	35.5	25.9	32.4	35.6	19	22 31.5	27.6	26 St. 49.2	40.5
Mar. 6	25.3	25.7	15 51.8	35.3	29	23 7.8	27.8	49.5	41.1
16	19.8	25.6	16 12.7	35.1	Aug. 8	23 43.2	27.9	46.6	41.7
26	21 St. 13 19.9	25.5	16 34.7	35.0	18	24 16.8	28.1	21 40.6	42.2
Apr. 5	25.3	25.3	16 57.3	35.0	28	24 48.2	28.3	31.7	42 7
15	36.0	25.2	17 20.0	35.1	Sept. 7	25 16.6	28.6	20.2	43.2
25	13 51.7	25.0	17 42.1	35.2	17	25 41.4	28.8	21 6.6	43.5
May 5	14 12.0	24.9	18 3.5	35.4	27	26 2.0	29.1	20 51.3	43.8
15	14 36.4	24.8	23.4	35.8	Oct. 7	18.1	29.5	35.0	43.9
25	15 4.4	24.8	41.5	36.1	17	29.1	29.8	18.2	44.0
June 4	15 35.4	24.7	18 57.5	36.6	27	1 St. 34.8	30.2	20 1.7	43.9
14	16 8.7	24.7	19 10.9	37.1	Nov. 6	26 35.0	30.5	19 46.1	43.7
24	16 43.8	24.7	21.6	37.6	16	29.8	30.9	32.1	43.5
July 4	17 19.9	24.7	29.1	38.2	26	19.4	31.2	20.1	43.1
14	17 56.4	24.8	23 St. 33.6	38.8	Dec. 6	26 4.2	31.5	10.8	42.7
24	18 32.5	24.9	34.7	39.4	16	25 45.0	31.8	4.5	42.2

Uranus.			Neptune.		Uranus.			Neptune.	
Date.	Long.	Lat.	Long.	Lat.	Date.	Long.	Lat.	Long.	Lat.
1870.	♑	0°n.	♈	1° s.	1872.	♑	0°n.	♈	1° s.
	° ′	′	° ′	′		° ′	′	° ′	′
Dec.16	25 45.0	31.8	19 4.5	42.2	May 9	27 39.7	33.4	24 43.0	39.5
26	25 22.4	32.0	31 St. 1.4	41.7	19	28 0.3	33.2	25 3.3	39.8
'71, J. 5	24 57.6	32.1	1.9	41.1	29	28 25.0	33.0	21.9	40.1
15	24 31.6	32.2	5.8	40.6	June 8	28 53.3	32.9	38.5	40.6
25	24 5.7	32.3	19 13.1	40.0	18	29 24.5	32.8	25 52.6	41.1
Feb. 4	23 41.0	32.3	23.7	39.5	28	29 58.2	32.7	26 4.0	41.6
14	23 18.6	32.2	37.2	39.1	July 8	♌ 0 33.7	32.7	12.5	42.2
24	22 59.5	32.1	19 53.4	38.7	18	1 10.1	32.7	17.8	42.8
Mar. 6	44 6	32.0	20 11.8	38.4	28	1 47.0	32.8	26 19.8	43.4
16	34.4	31.8	20 32.0	38.1	Aug. 7	2 23.6	32.9	30 St. 18.5	44.0
26	22 29.3	31.6	20 53.5	38 0	17	2 59.2	33.0	14.1	44.6
Apr. 5	31 St. 29.5	31.4	21 15.9	37 9	27	3 33.2	33.2	26 6.6	45.1
15	35.2	31.2	21 38.5	37.9	Sept. 6	4 4.8	33.5	25 56.3	45 6
25	22 46.1	31.0	22 1.0	38.0	16	4 33.4	33.7	43.7	46.0
May 5	23 2.0	30.8	22 22.8	38.2	26	4 58.4	34 0	29.1	46.3
15	23 22.4	30.6	22 43.5	38.5	Oct. 6	5 19.3	34.4	25 13.2	46.5
25	23 47.1	30.5	23 2.6	38.8	16	35.4	34.8	24 56.6	46.6
June 4	24 15.3	30.4	19.7	39.2	26	46.4	35.1	39.8	46.6
14	24 46.5	30.3	34.5	39.7	Nov. 5	52.1	35.5	23.7	46.4
24	25 20.1	30.2	46.6	40.3	15	11 St. 5 52.3	35.9	24 8 7	46.2
July 4	25 55.4	30.2	23 55.7	40.8	25	47.0	36.3	23 55.6	45.9
14	26 31.7	30.2	24 1.8	41.4	Dec. 5	36.4	36.7	44.9	45.5
24	27 8.5	30.3	4.7	42.0	15	21.1	37.0	37.0	45.0
Aug 3	27 44.9	30.4	28 St. 4.2	42.6	25	5 1.6	37.3	32.3	44.4
13	28 20.4	30.6	24 0.5	43.2	'73, J. 4	4 38.9	37.5	St. 31.0	43.9
23	28 54.2	30.8	23 53.7	43.8	14	4 14.0	37.7	23 33.2	43 3
Sept. 2	29 25.7	31.0	44.1	44.2	24	3 47.9	37 8	38.8	42.7
12	29 54.2	31.2	32.0	44.7	Feb. 3	3 21.9	37.8	47.8	42.2
22	♌ 0 19.1	31.5	17.9	45.0	13	2 57.2	37.8	23 59.9	41.7
Oct. 2	0 39.8	31.9	23 2.3	45.2	23	34.9	37.7	24 14.8	41.3
12	0 55.9	32.2	22 45.8	45.3	Mar. 5	15.8	37.5	24 32.1	40.9
22	1 7.0	32.6	22 29.1	45.4	15	2 1.0	37.3	24 51.5	40.6
Nov. 1	12.6	33.0	22 12.7	45.3	25	1 50.9	37 1	25 12.4	40 4
11	7 St. 12.8	33.3	21 57.4	45.1	Apr. 4	45.9	36.8	25 34.4	40.2
21	1 7.6	33.7	43.8	44.8	14	9 St. 46.3	36.6	25 56.9	40.2
Dec. 1	0 57.1	34.0	32.5	44 4	24	1 52 0	36.3	26 19.5	40.2
11	0 41.8	34.3	23.9	43.9	May 4	2 3.1	36.1	26 41.7	40.4
21	0 22.5	34.6	18.3	43.4	14	2 19.1	35 8	27 3 0	40.6
31	♑ 29 59.8	34.8	21 16.2	42.9	24	2 39.7	35.6	22.9	40 9
'72, J. 10	29 34.9	35 0	2 St. 17.4	42.3	June 3	3 4.4	35.4	41.1	41.3
20	29 8.9	35.1	22.2	41.7	13	3 32.8	35.2	27 57.1	41.8
30	28 42.9	35.2	30.4	41.2	23	4 4.1	35.1	28 10.6	42.3
Feb. 9	28 18.2	35.1	41.7	40.7	July 3	4 37.9	35.0	21.3	42.8
19	27 55.9	35.1	21 56.0	40.2	13	5 13 4	35.0	29.0	43.4
29	36.8	34 9	22 12.7	39.9	23	5 50.0	35.0	33.4	44 0
Mar.10	21.9	34.8	22 31.6	39.5	Aug. 2	6 27.0	35.1	St. 34.7	44 6
20	11.8	34.6	22 52.2	39.3	12	7 3.7	35.2	28 32.6	45.2
30	27 6.7	34.3	23 14.0	39.2	22	7 39.5	35.3	27.4	45.8
Apr. 9	4 St. 7.1	34.1	23 36.4	39.1	Sept. 1	8 13.6	35.5	19.1	46.3
19	12.8	33.9	23 59.1	39.1	11	8 45.3	35.7	28 8.3	46.8
29	23.8	33.6	24 21.4	39.3	21	9 14.1	36.0	27 55.1	47.1

Uranus.			Neptune.		Uranus.			Neptune.	
Date.	Long.	Lat.	Long.	Lat.	Date.	Long.	Lat.	Long.	Lat.
1873.	♎ ° ′	0° n ′	♈ ° ′	1° s. ′	1875.	♎ ° ′	0° n. ′	♈ ° ′	1° s. ′
Sep.21	9 14.1	36.0	27 55.1	47.1	Feb.13	12 44.2	42.4	28 23.1	43.7
Oct. 1	9 39.2	36.4	40.1	47.4	23	12 19.5	42.3	28 36.7	43.2
11	10 0.1	36.7	24.0	47.6	Mar. 5	11 57.2	42.2	28 52.8	42.8
21	16.3	37.1	27 7.2	47.7	15	38.2	42.0	29 11.2	42.4
31	27.4	37.5	26 50.5	47.6	25	23.3	41.8	29 31.4	42.2
Nov 10	33.1	37.9	34.6	47.4	Apr. 4	13.3	41.5	29 52.9	42 0
20 (16 St.)	10 33.2	38.3	20.1	47.2	14	11 8.3	41.2	♉ 0 15.1	41.9
30	27.9	38.7	26 7.5	46.8	24 (18 St.)	8.8	40.9	0 37.7	41.9
Dec.10	17.2	39.1	25 57.5	46.4	May 4	14.6	40.5	1 0.2	42.0
20	10 1.8	39.4	50.4	45.9	14	25.6	40.2	1 22.0	42.
30	9 42.3	39.7	46.5	45.3	24	11 41.7	39.9	1 42 6	42
'74, J. 9	9 19.5	39.9	6 St. 46.0	44.7	June 3	12 2.4	39.6	2 1.7	42.8
19	8 54.5	40.1	49.1	44.1	13	12 27.2	39.4	18.9	43.2
29	8 28.4	40.2	25 55.6	43.6	23	12 55.6	39.2	33.7	43.7
Feb. 8	8 2.4	40.2	26 5.4	43.0	July 3	13 27.1	39.1	45.9	44.2
18	7 37.7	40.2	18.2	42.5	13	14 1.0	38.9	2 55.1	44.8
28	7 15.3	40.1	33.7	42.1	23	14 36.7	38.9	3 1.3	45.4
Mar 10	6 56.3	39.9	26 51.6	41.7	Aug. 2	15 13.5	38.9	4.2	46.0
20	41.5	39.7	27 11.4	41.4	12	15 50.7	38.9	6 St. 3.8	46.6
30	31.4	39.4	27 32.6	41.2	22	16 27.7	39.0	3 0.1	47.2
Apr. 9	26 5	39.1	27 54.8	41.1	Sept. 1	17 3.7	39.2	2 53.4	47.7
19 (13 St.)	6 26.9	38.8	28 17.3	41.1	11	17 38.1	39 4	43.8	48.2
29	32.7	38.5	28 39.8	41.2	21	18 10.1	39.6	31.7	48.6
May 9	43.7	38.3	29 1.9	41.3	Oct. 1	18 39.0	39 9	17.6	49.0
19	6 59.8	38.0	29 22.9	41.6	11	19 4 4	40 2	2 1.9	49.2
29	7 20.4	37.7	29 42.4	41.9	21	25.5	40.6	1 45.3	49.3
June 8	7 45.2	37.5	♉ 0 0.1	42.3	31	41.8	41.0	1 28.5	49.3
18	8 13.6	37.3	15.5	42.8	Nov 10	53.0	41.4	1 12.1	49.2
28	8 45.0	37.2	28.3	43.3	20	58.6	41.9	0 56.7	48.9
July 8	9 18.9	37.1	38.3	43.9	30 (25 St.)	19 58.8	42.3	43.1	48.6
18	9 54.5	37.1	0 45.2	44.5	Dec.10	53.3	42.7	31.8	48.2
28	10 31.2	37.1	48.9	45.1	20	42.6	43.1	23.1	47.7
Aug. 7	11 8.3	37.1	4 St. 49.3	45.7	30	27.1	43.5	0 17.6	47.1
17	11 45.2	37.2	46.5	46.3	'76, J. 9	19 7.5	43.8	15.5	46.5
27	12 21.0	37.4	0 40.5	46.8	19	18 44.6	44.0	11 St. 16.8	45.9
Sept.6	12 55.3	37.6	31.5	47.3	29	18 19.5	44.2	0 21.6	45.3
16	13 27.1	37.8	20.0	47.8	Feb. 8	17 53.3	44.3	29.7	44.8
26	13 56.0	38.1	♈ 0 6.4	48.1	18	17 27.2	44.3	41.1	44.2
Oct. 6	14 21.2	38.4	29 51.1	48.4	28	17 2.5	44.2	0 55.3	43.8
16	14 42.2	38.8	34.7	48.5	Mar. 9	16 40.2	44 0	1 12.1	43.3
26	14 58.5	39.2	17.8	48.6	19	16 21.2	43.8	1 30.9	43.0
Nov.5	15 9.6	39.6	29 1.3	48.5	29	16 6.4	43.6	1 51.4	42.7
15	15.3	40.0	28 45.7	48.3	Apr. 8	15 56.3	43.3	2 13.2	42.6
25 (20 St.)	15.5	40.5	31.6	48.0	18	51.4	42.9	2 35.6	42.5
Dec. 5	15 10.0	40.9	19.5	47.6	28 (23 St.)	51.8	42.6	2 58.2	42.5
15	14 59.4	41.3	10.2	47.1	May 8	15 57.6	42.2	3 20.5	42.6
25	43.9	41.6	28 3.9	46.6	18	16 8 6	41.9	3 42.0	42.8
'75, J. 4	24.3	41.9	0.8	46.0	28	16 24.7	41.6	4 2.4	43.1
14	14 1.5	42.1	8 St. 1.3	45.4	June 7	16 45.3	41.3	21.0	43.5
24	13 36.4	42.3	5.2	44.8	17	17 10.2	41.0	37.6	43.9
Feb. 3	13 10.2	42.4	12.5	44.3	27	17 38.6	40.8	51.8	44.4

LBJL 20

Deacidified using the Bookkeeper process.
Neutralizing agent: Magnesium Oxide
Treatment Date: Dec. 2004

PreservationTechnologies
A WORLD LEADER IN PAPER PRESERVATION
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